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BRITISH MEDICAL JOURNAL

JOURNAL OF THE BRITISH MEDICAL ASSOCIATION

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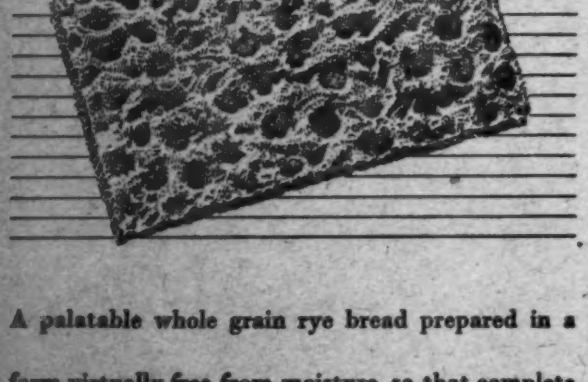

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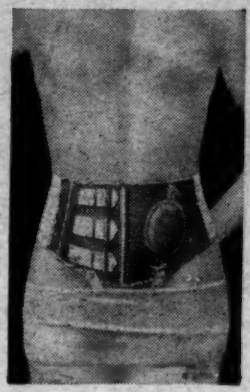

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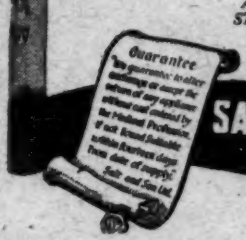

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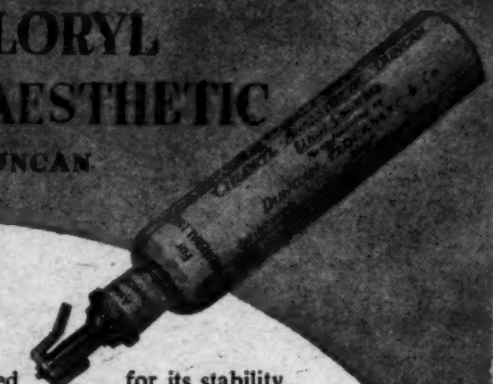

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BRITISH MEDICAL JOURNAL

LONDON SATURDAY SEPTEMBER 11 1948

HUMAN RELATIONS IN INDUSTRY*

BY

Sir GEORGE SCHUSTER, K.C.S.I., K.C.M.G., C.B.E., *M.C.*

1. My approach will be that of a "universalist" rather than a specialist.† I shall try to present various relevant considerations in their right total setting.

2. The subject of human relations in industry is attracting increasing attention to-day. There are many reasons for this in the conditions of our time. In the desperate national need for improved production there is a growing appreciation that, since mechanical re-equipment will take a long time, immediate results must be sought mainly in better use of human effort, for which voluntary co-operation is an essential condition.

3. That there should be increased interest is to the good. But there are dangers in a special concentration of interest aroused in this way—first, the danger that the improvement of human relations may be sought merely as a means to an end, and, secondly, the danger that the human factor may be treated as a detached subject for the specialist, as something which can be studied in isolation instead of as part of a total situation for which all share responsibility.

The Ends of Industrial Activity

4. "What are the ends of industrial activity?" As I see it there should be a threefold purpose.

(1) To achieve "excellence"‡ in production, which in practical terms means to produce the "right" things with the minimum expenditure of human effort and material resources.

(2) To provide for the human beings engaged in it a satisfactory activity as the foundation of a good life.

(3) To fit in as an important part of a satisfactory pattern of society.

Of course in this imperfect world (certainly as we are likely to find it in our lifetime) there will be no ideal fulfilment of all these purposes. In practical circumstances they may at times be in conflict one with the other in the sense that more emphasis on one may mean less on the others. But no single one of them can be neglected, and the three must be reconciled as best possible.

Let me apply these ideas to the subject of my address in the actual conditions of to-day, and explain my apprehensions of the "dangers."

5. My chief point is that if managers start now to take a human interest in their workers *merely* as a means to an end—merely in order to improve production results—then they will be both wrong and unsuccessful. They will be wrong because it is wrong to treat human beings merely as a means to an end. They will be unsuccessful because they will be found out. The whole industrial field is bedevilled with suspicions based on past memories. As a result, even the most honest attempts to improve human relations tend to be viewed with mistrust—either as mere dodges to get something extra out of the workers for the benefit of the profit-makers or as signs of a temporary mood "produced by force of circumstances rather than a change of heart" (to quote words recently used to me by a trade union leader).

Human Relations

6. Good human relations in industry can only be surely founded on the treatment of each individual as a human being of infinite value whose welfare in the highest sense must be regarded as an end in itself. Industrial employment can provide the foundation for this welfare to the extent that the worker can find interest, free self-expression, and happiness in his work, something more than a mere distasteful way of earning a living. To help workers to find this should, therefore, be seen as an essential part of the managers' task in handling human relations.

7. But before I turn to that I want to make two points to show how I see this central purpose in its relations with the other two purposes in my list and in the total picture.

If to-day there is a danger that the "central purpose" will be debased or distrusted by being seen merely as a means to getting increased production, there is a converse danger that concentration on creating good human relations may tend to make the importance of *efficiency* undervalued. It is not enough for managers to be human and kind-hearted. Their efficiency—technical, commercial, administrative—is also necessary. Without that, "excellence in production," the first in my list of three purposes, cannot be achieved. And that is vital. If British industry fails in the quantity and quality of its production our whole order of society may break down. But there is more in it than this. Efficiency in management (both technical and commercial) is an essential condition for good human relations. As Sir Stafford Cripps said the other day, "Co-operation rests on confidence, and confidence rests on competence."

Social Setting

8. The other point I want to make is concerned with the social setting—that is to say, with the third heading in my list of ends. It is impossible to have the right atmosphere of interest, happiness, and co-operation in industrial employment if the demands which it makes on the individual are in conflict with his social setting or his aspirations as affected by that setting. If his work makes demands on his time and energies which prevent his playing his due part as a member of his family or of other social groups. if,

*Read in opening a discussion in the Section of Occupational Health at the Annual Meeting of the British Medical Association, Cambridge, 1948.

†"Universality does not consist in knowing as much as possible, but in seeing the relation between things. The universalist man does not wish to know everything but to grasp what is essential. Suddenly in a moment of blessed rapture he is vouchsafed a glimpse of the whole." (Walter Schubart.)

‡I use "excellence" in the sense of the Greek word "arete."

in his outside society, his interest in his work brings him not honour but low regard or even ridicule, that will set up internal conflicts militating against good work or happiness in it.

9. Let me sum up what I have been trying to say. First, the greatest need of our modern industrial society is to make industrial employment something which is, and is seen as, an essential part of a satisfactory human life (individual and social), *not* a cause of conflict or an evil burden to be escaped from or reduced as far as possible. Secondly, this purpose will not be attained unless managers are both single-hearted in their pursuit of it and also efficient at their production job. Thirdly, industrial employment must fit in harmoniously with the workers' social setting.

10. These conceptions are absolutely fundamental. They are fundamental for the individual because without satisfying work—free expression in work—there can be no sure foundation for his physical, mental, or spiritual health. They are fundamental for society because somehow or other industrial employment must be fitted into the total pattern of society as part of a balanced and harmonious whole. (We have hitherto failed to evolve a satisfactory pattern of an industrial society.) They are fundamental for economic achievement because, unless industrial employment can fit in with a satisfactory individual life and a satisfactory form of society, there must always be friction and loss of effort in industrial employment.

Practical Arrangements or Methods

11. What then are the practical arrangements or methods which will help to make industrial employment a satisfying creative activity which fits in with a satisfactory pattern of society? This is what I see as the main question. But there is perhaps a prior question which must be answered. Is the end stated in my question attainable at all? Is my whole approach unrealistic? Doubtless many people will think it is. Certainly it is a commonplace to say that conditions of modern industry—with its mechanization, mass production, breakdown of skilled jobs into repetitive unskilled or semi-skilled operations, and so on—have made it impossible for the bulk of manual workers to find in their daily work a soul-satisfying activity. I do not deny the difficulties; but I think they are exaggerated. I believe that modern industry offers opportunities for new kinds of interest to offset the loss of craft interest. Nevertheless there is of course here a crucial question, and we need to know much more on many aspects of it—how jobs affect different people; what proportion of drudgery is tolerable or, indeed, may even be desirable as a sort of "roughage" in our mental and spiritual diet; how jobs and machines can be designed with better regard for the human beings who have to do or operate them; how far, even from a production point of view, it is right to break down jobs into separate operations; at what point there begins to be a loss of effort from boredom or monotony which counterbalances any benefit from simplification, etc., etc.

12. Taking account of all these considerations I find myself brought to certain practical conclusions.

First, the less the creative satisfaction in the work itself the greater is the need for supplementing it with satisfactions in comradeship, in understanding the common purpose of the working team, and in the use of leisure.

Secondly, at the very lowest, industrial work should be seen as a dignified activity, a necessity of nature, a condition of self-respect—not a definite evil imposed unnecessarily by the selfishness or incompetence of others. At the very lowest, even though it may not be itself a strong positive element of satisfaction in a good life, it must at least afford a foundation for that and not be an obstacle to it.

13. With these reflections I turn back to my main question—"What are the practical methods and arrangements which will help to make industrial employment a satisfying creative activity in a satisfactory pattern of society?"

The first thing to make clear is that there is no single universal prescription, no code or set of rules which an industrial leader can adopt with the comfortable feeling that he has got the solution for all the problems for the rest of his life. Indeed it is an essential point in my answer to say: "Beware of cut-and-dried systems; the problem is one which needs never-ending attention, fresh effort every day, courage to face disappointments, flexibility to adapt methods to the varying conditions and different classes of work or worker, patience and sympathy to understand each single individual with his infinite variability. (For it all comes down to the individual in the end.)"

14. There is another reason why no single answer can be found to my question. One cannot generalize about British industry. There are such great variations between one unit and another, one industry and another, one district and another.

15. Yet this recognition that there can be no finality and that there must be constant variety and flexibility of method should not blur the conception of the guiding purpose nor discourage efforts to keep day-to-day practice under continuous scientific observation. On the contrary, the very nature of the case increases the need for clarity of purpose and patient interpretation of experience.

Negative Obstructions

16. When one turns to consider practical measures, I believe that the chief emphasis for immediate attention should be placed on removing obstructive influences.

I say this for two reasons. First, I believe in individual liberty as a fundamental principle, and I regard freedom of expression in work as the most essential element in this. Therefore I favour the sort of method which as far as possible leaves the individual to work out his own salvation. Secondly, I believe that the ordinary people of this country are fundamentally decent and ready to make the best of things.

Without arguing these points fully I will state my own belief that the problem of creating adequate satisfaction in work would not be too difficult if certain negative and obstructive influences could be removed. Our chief trouble to-day is that there are so many of these which prevent the individual giving his normal instinctive response. There are the suspicions which I have already mentioned based on memories of the past. There is the fact that the individual worker approaches many questions as a trade unionist, and that the whole trade union organization grew up as a war organization to fight for one side against another. There is the fact that, in spite of recent improvements, material conditions—housing conditions, factory conditions, methods and tools of work—are in many cases such as to make it very hard for the individual to see his work as a satisfying activity consistent with a good social life. There is the fact that for many the margin for security, leisure, and good times is still inadequate.

These are all general considerations. But in every particular situation there will be found particular obstacles. I could give many illustrations where the influence of individuals—individual tactlessness, or jealousy, or suspicion—is holding up progress and co-operation.

There is need to deal resolutely and patiently with all these negative obstructions, general and particular. That requires tactful handling of individuals, but in the long run success will depend on getting the right guiding purpose clearly conceived and widely accepted.

17. If, then, my remarks are to have any practical value I must give more concrete content to my definition of the guiding purpose. In the simplest terms I have stated this as the purpose of making the individual happy in his work. But of course one cannot consider the individual in isolation. His work must fit in with that of his fellow workers and his relations with them form an essential part of the conditions affecting the result.

Essential Points

18. The best way to bring out the kinds of action which are necessary is to make a list of the main points which are essential for a satisfactory total situation. Approaching the matter in this elementary way I would say that the guiding purpose should be to create in each industrial undertaking a satisfied healthy community of individuals

each interested in his own job,
feeling that he has an individual responsibility for it and some freedom for expressing himself in it;

all working together as a team,
with a sense of joint responsibility,
understanding the place of their own work in the total purpose. Satisfied that this total purpose has a recognizable social value.

Working in healthy conditions
at tasks which give the satisfactions of skill in performance and of physical effort accomplished without overtaxing strain,

and finally satisfied that the proceeds of the whole joint effort are fairly divided.

This is a very elementary statement. It includes eleven conditions, all of which are familiar.

The much more difficult question, however, is by what means these conditions can be established.

19. I will start with two general or overriding conditions.

(1) *Organization.*—There must be a good organizational structure capable of supporting the ideas embodied in my list of eleven conditions. Otherwise anything done about them will be mere camouflage with no genuine validity. In particular there must be a clear conception of the function of every individual working in the organization, and a clear chain of authority. Each must know *for what* and *to whom* he is responsible. Otherwise the idea of joint responsibility will not work; and there will be a constant risk of confusion and frustration. This of course has a bearing on the position of industrial medical officers.

(2) *Enlightened Opinion from the Floor Upwards.*—It is in the creation of this that I see the essential purpose of joint consultative methods. I cannot, as I should like to do, deal fully with all that is involved in the successful application of these methods. But there is one point which I must make. Joint consultation is normally, and quite correctly, seen as a method for bringing about a sharing of responsibility. But there are some current fears (and aspirations) about this idea of "sharing responsibility" which I think are based on a misconception. As I see it, sharing responsibility ought not to mean getting responsibilities either confused or divided. It ought not to mean that the workers claim a share in "management" in the sense of usurping responsibilities which properly belong to management. Nor, conversely, should it mean "management" trying to put on to the backs of the workers responsibilities which it should carry itself. (I mention this latter possible interpretation because I have found that in certain cases, where "management" has carried ideas of joint consultation very far, apprehensions of this kind are actually voiced by the "workers.") What it should mean is, on the one hand, that every worker should have the chance to put forward ideas on the arrangements affecting his own job and feel that he has some freedom in the actual handling of that job, and, on the other hand, that in doing this he should have an understanding of the central purpose of the whole organization.

The chief executive officer, just like a military commander, has certain responsibilities for leadership and decision which he cannot devolve. There should be no weakening in his leadership and authority. But that does not mean that he should not help his subordinates to understand the reasons for his decisions, or that when it comes to settling how operations (whether in military action or industrial production) should be carried out he cannot get valuable ideas by consultation with his subordinates right down to the rank and file. The essence of good organization is (as Elton Mayo has well put it) to ensure that every decision is taken at the level where it can be most rapidly and effectively taken. And the essential point is that decentralized decisions cannot be well taken unless they are based on sufficient understanding of the central purpose. It is in these conceptions that I see the essential value of joint consultative methods, and I want to see medical officers brought into the whole process of joint consultation.

Role of Medical Officers

20. I pass from these two overriding conditions to consider a few particular points in regard to which, as I see it, medical officers have a most important part to play.

(*a*) First, there is all that is involved in *fitting the man to the job and the job to the man.* This of course has two aspects: on the one hand, selection and training of the man; on the other hand, design of the job and the tools for doing it. The two aspects are interdependent. I have already in my introductory remarks stated my view that much more study is needed of the psychological reactions of different kinds of manual work (taking into account the different aptitudes and characters of individuals). Based on such studies, much more thought should be given to the arrangement of production processes and the design of machines so that they may be best adapted to the human beings who have to work them.

We can all think of types of machines which must tend to "dehumanize" those who work them. There are many other aspects of this question. One of particular interest is the effect of ageing on industrial capacity. Increasing age may increase the value of certain capacities and diminish the value of others. Jobs should be designed to take account of this. This is important not only for the sake of the individuals concerned but also for general morale and production results. For example, new methods of work measurement and control introduced by some progressive firms are undoubtedly "hotting up the pace" of work, so that the older men feel at a disadvantage. Yet some of the older employees, say in the 50's, may in many ways be the most valuable elements in a works community.

Another aspect is when a man suffers from some special disability which disqualifies him for certain jobs—for example, colour blindness. Careful human consideration of the individual is necessary in such cases, consideration which will discover what he is best suited for and what openings can be found. In all this of course the medical officer can play a great part. His knowledge can help in the designing of machines as well as in finding out for what a man is best fitted. The positive helpful approach is needed here.

(*b*) A second point that I specially select for mention is *human understanding of each individual.* As I have already said, it all comes down to the individual in the end, and I regard it as a vital feature of a good organization that every worker should have, in the chain of authority above him, someone who can give appreciation of good work and who also understands him as an individual—not only in his work but in his interests and all the outside influences which affect him.

This point is of great importance in itself; but also for another reason. I see it as closely connected with discipline. There must be discipline; but firm discipline cannot be fairly exercised without an understanding of the individual and all that affects his conduct.

(*c*) Thirdly, I come to an obvious point—health. This—and I mean positive health in the widest sense—is clearly a vital factor affecting the will to work and happiness in work. It is so essentially the subject of your conference that I will not enlarge upon it in this introductory talk.

21. I have, as already explained, selected these three points because I see them as matters which closely affect the position of medical officers and in regard to which they have a special part to play.

Outside Influences which may Help or Obstruct

22. To complete my sketch of the general framework I must make a short reference to the outside influences which may help or obstruct the fulfilment of the purposes of which I am speaking.

Of all the outside influences that of the trade unions is the most obviously important. Here there are crucial questions to-day. What is going to be the trade union attitude to firms which are genuinely trying to create a sense of joint responsibility, community, and loyalty? Will trade union officials fear conflict of loyalties and obstruct? Or will they use their powers to encourage such firms? I believe the national trade union leaders are likely to take a broad and sound view on this question; but the attitude of subordinate officials in the districts may be different.

Apart from the trade union there are of course many other outside influences to take into account; political influences (under which heading one must put the Communist influence, which may be based on a desire to see the whole existing system break down); social setting and home conditions, the locality and its traditions; education (with particular reference to the effect on the general attitude to manual work of extending the statutory school-leaving age to 16); memories—good memories for bad things—an obstructive influence chiefly in the old industries like coal-mining or cotton textiles which got their form in the early days of the Industrial Revolution and have been through bad times; and, finally, habits and the effect of world wars on breaking habits.

The Parts to be Played

23. What I have said hitherto about ends, methods, and outside influences has all been intended to lead up to the practical question, How should the various people concerned—executive officers, functional officers, rank and file—play their parts in the field of human relations?

In turning to this question of the parts to be played I come to the second of the two current dangers to which I referred at the beginning—the danger of regarding the human factor or human relations in industry as subjects which can be considered in isolation or left to specialists.

Everything to do with human relations and attitudes must be seen as an integral part of a total situation. Everyone engaged in industry in any capacity should be concerned with these questions all the time. When a production programme is being planned, when plant layout is being discussed, when new machinery is to be installed, or new designs of products are to be introduced—in every decision affecting every aspect of work—the reactions on the human being concerned should be taken into account.

24. For this reason I want specially to stress the importance in regard to this matter of human relations of having the right conceptions of the position of specialists or functional officers,* and of the role of detached scientists and scientific research. Scientific research into human factor problems cannot be carried out in laboratories; and the chief value of the "scientific approach" in this field lies in the application of scientific method to the continuous daily study of the life processes of industry—industry being seen as a body of human beings working together for a specific purpose. Special pieces of research work may be of value but they must be carried out on the spot in industry and must be applied to total situations, treating the unit investigated as a functional whole. Even these *ad hoc* investigations alone can make only a minor contribution. The major need is for continuous observation in the course of normal work.

*It has been well said that the general manager should himself be a specialist on human relations. But this does not mean that a personnel officer should not be included among the functional officers.

Industrial Medical Officers

25. This brings me to the position of industrial medical officers considered as a class of specialists who have a most important part to play in the matter of human relations. I will venture some ideas I would like to see accepted.

(i) The aim should be essentially constructive—the creation of positive health rather than merely the cure, or even the prevention, of disease.

(ii) A full-time medical officer should be employed and should be treated as a member of the management team. He has just as much right to this as the chief engineer.

(iii) As members of the team, works' medical officers should take part in all joint management discussions and should know broadly what is happening in the firm as a whole. The medical view should be heard on every point in the total planning of premises, plant, production, etc.

(iv) The fact that a medical officer is a specialist should not exclude him—or indeed any other specialist—from eligibility for appointment to the highest administrative posts, if he desires that, and if he has the necessary abilities and qualities.

(v) If, on the strength of this broad conception of the human responsibilities of management, the medical officer is included in the management team he must himself have similar broad human conceptions of his own work. He must see the men and women with whom he comes in contact not as "cases" but as human beings. He must be interested in all that affects them. He should have "psychological insight into the material with which he is dealing." I take these last words from a paper read recently by Dr. Donald Stewart.

26. In what I have said I have been putting forward the broad conception of the works medical officer as a member of the management team. This I see as necessary for the achievement of the main purpose in human relations. But it is also necessary if the medical officer is to be able to do his own daily tasks properly.

"For instance"—to quote from a managing director's letter—"I well remember our own medical officer having a check done on the carbon-dioxide content of one of our shops and finding it somewhat too high for his liking. He examined the shop and found that by extension of the flue pipes on certain die-casting machines it seemed probable that this inert gas could be more efficiently exhausted. This was done, and overcame the problem quite simply. I am sure that the less-trained man would have demanded 'a much more efficient ventilation system,' which would have involved enormous expenditure and which would then, by its nature, have increased the heating problem in the shop, giving rise in turn to the need for better heating arrangements, but leaving the problem of draught behind it still."

27. Points like these are of considerable practical importance, but I am more concerned with the contribution which the medical officer can make towards achieving what I have described as the essential task of management in the field of human relations—to create conditions in which people can find interest and happiness in their work. The matching of the worker and the job is part of the task on which the good medical officer can make the decisive contribution.

Human Contacts

28. Beyond this I am impressed with the special opportunity which the good medical officer can have in the whole field of human contacts—especially under the heading of

appreciation of the individual. He has the chance to make close contacts with workers without arousing any suspicions of ulterior motives. He has an opportunity to gain their confidence and to get to know their personal problems and all the outside influences which affect them. And at this point I want to express the view that, when the general relations between management and workers are good, there is no ground for the fear that the medical officer will become suspect because of his association with management if he is treated as a member of the management team. On the contrary, I believe it is true to say that, because he is a doctor who has access to and can influence management, the workers will go to him with problems which would otherwise never come to light.

In that connexion I am specially impressed with the opportunities of the medical approach in industries where the psychological atmosphere is abnormally difficult—coal-mining for instance. I have in mind, for example, the investigation which is now being made into nystagmus by Professor Brown, working from Durham University. All his arrangements have been made with and are supported by the local trade union organization.

In all this field one has to remember that psychological investigations—any research projects which can be regarded as a sort of "psycho-analysis" of the workers—are apt to arouse acute suspicions. On the other hand, investigations made for a clear purpose which the workers can readily understand are welcomed and can evoke co-operation.

Full-time Medical Officer

29. I have advocated a service for purposes which could not be met by occasional visits from an outside practitioner but which depend on a full-time medical officer treated as an integral part of the management team. I have advocated such a service for the whole of industry. But what is the present position? I believe that, when Sir Thomas Legge arranged the first conference of industrial medical officers in 1921, only 20 could be found. Now I am told that there are ten times that number—about 200, supplemented by about 700 part-time officers. This obviously therefore covers only a tiny patch of industry. There are about 150,000 factories in this country. The vast majority of these of course are very small, but 15,000 are advanced enough to have canteens.

Obviously, therefore, my ideal is a very long way off. But is it really practicable? Would it cost too much? How could it be provided by small concerns which could not afford the service of a full-time medical officer of their own?

30. I do not know whether there has been any comprehensive investigation on these questions. I can do no more than raise them as questions for discussion. As to cost, I have been interested in some articles by Dr. Gange, the chief medical officer of the Glacier Metal Company, which showed that the annual cost in an engineering firm employing about 3,000 worked out at 22s. per head. Dr. Gange compared the total annual cost in this case—£3,300—with the normal rate of expenditure on the maintenance department of an industrial undertaking of that kind and size, which he put at £20,000 to £50,000. Certainly if these figures are a true guide there ought to be no obstacle on financial grounds.

As to the provision of services for the smaller firms the solution would clearly have to be found in some kind of grouping arrangements.

31. I pass now to another question which has been in my mind throughout, and which has very wide implications—namely, "How do my conceptions of a medical service provided by individual firms fit in with Government policy, Factory Acts, the factory inspectorate, national health policy, and the new State medical service scheme?"

I will only venture on a few observations on what might be the effects if, over the whole industrial front, there could be developed the kind of works medical service which I have advocated.

(i) It could be fitted in with, and be a most valuable supplement to, anything that can be done by the Government by way either of factory legislation or of a State medical service.

(ii) The kind of research work into industrial health, fatigue, etc., which has for many years been sponsored by the Medical Research Council would have a much greater chance of getting effective application.

(iii) There might be considerable economies and a much better adjustment between what is attempted or prescribed and the resources that are available. The example that I quoted from a works medical officer in a particular factory seems to show that, if such advice were always available, good practical results might be achieved at much less expense than if the same results were aimed at by rigid regulations.

32. Lastly, it is important to observe—and this is in harmony with all that I have been saying to-day—that a works medical officer could not possibly fill the place I envisage in a management team and in the confidence of the workers unless the whole attitude of management is such as to have already won their complete confidence. Unless there is confidence based on genuine consideration for the individual worker medical advice and medical inspection, if seen as part of the "management" set-up, are apt to be distrusted and feared.

A Request

33. At the end of this unduly long paper I want to put forward a practical request. I imagine that I have been asked to address you because I am a member of the Government's new Committee on Industrial Productivity and chairman of its Panel on the Human Factors affecting productivity. From a panel of a committee which is only advisory and which is dealing with such an all-embracing and elusive subject as the human factor it is not easy to produce effective action. In the first place we have inaugurated a series of research projects covering such matters as joint consultation methods; the training and selection of foremen; work design and measurement of human performance; effects of ageing on industrial productivity and allocation of work; the effect on production of simplifying operations by job breakdown; methods for dissemination and assimilation of existing knowledge, etc. We are also planning some investigations into particular industries. Apart from these research projects we hope to be able to stimulate action of a more practical nature designed in various industries or areas to encourage the exchange of knowledge and the raising of average standards of productive efficiency nearer to the level which progressive firms have shown to be possible.

If any effective action is to result, that will depend largely on the measure of active co-operation which can be got from industry—both management and trade unions—as well as on the closeness of contact which can be established so as to reveal opportunities. I have from the beginning felt that most valuable aid could be got from industrial medical officers, and, without taking further time in explaining the position, I want to ask this conference whether it would be possible to form a group of industrial medical officers with whom my panel could discuss possibilities.

Conclusion

34. I will add one final word. All that I have said has been framed to lead up to certain considerations about the position of industrial medical officers as part of the manage-

ment team. I have naturally therefore tended to speak of human relations in industry in terms of the attitude of "management" to workers. But I do want to emphasize that to think in these terms alone is quite inadequate. Human relations in any case are a two-way business, and the success of anything that can be done depends not merely on how management behaves to workers but on how the individual workers respond. But there are some things which seem to me to be clear beyond all doubt.

The first is that management if it wants to retain leadership should not argue about who is to blame, but should itself accept responsibility for giving a constructive lead.

The second is this. To-day we must all make a choice between two alternative ways. Are we to go forward or back? Are we to play down to the worst motives—fear and greed—or play up to the best—pride in the job, a sense of responsibility, a desire to act a worthy part in life? I have no doubt about what is the right answer, whether viewed as a matter of practical expediency or moral rightness. The only hope is to go forward, and the chief task is to clear away the obstacles which hinder the better motives having free play.

RAT-BITE FEVER DUE TO STREPTOBACILLUS MONILIFORMIS

BY

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After many years of difficulty and confusion it is now clearly established that rat-bite fever may arise from two distinct infecting agents. Not all cases are due to actual rat bites, and in the absence of a clear history clinical differentiation of the two types is generally impossible and bacteriological evidence alone conclusive. Infection with *Spirillum minus* (originally named *Spirochaeta morsus muris* by its Japanese discoverers in 1916–17) is the commoner variety, and very many cases are on record. Infection with *Streptobacillus moniliformis* is much rarer, and Altemeier, Snyder, and Howe (1945) could trace only 17 examples published in the United States. This micro-organism was first discovered by Schottmüller in 1914, and classified by him as a streptothrix. The present name was first applied by Levaditi, Nicolau, and Poincloux in 1925, who isolated it from a laboratory worker, who, incidentally, had not been bitten by a rat.

The whole story of the elucidation of rat-bite fever of both varieties, including the relations of the streptobacillus to Haverhill fever and to the organismal cause of pleuropneumonia in cattle, is very fully reviewed by Brown and Nunemaker (1942). The incubation period of the spirillar infection is usually longer (seven days or much more) than in the streptobacillary disease (three days or more), but the period is so variable that only a clear history of a bite followed by a long interval before illness develops might clinically suggest the spirillar variety.

The newer arsenical drugs were quickly recognized to be very effective against the *Spirillum minus*, but the streptobacillary disease ran a protracted and serious course until the advent of penicillin.

This short account of a single case is intended to draw renewed attention to the *Streptobacillus moniliformis* as a cause of rat-bite fever in Britain, to illustrate the methods of rapid bacteriological diagnosis and the chief cultural characteristics of the organism, and to emphasize the dramatic effect of adequate penicillin treatment.

Case History

The patient was bitten on the right thumb while handling a hooded rat prior to an experimental operation. His hands were "scrubbed up" at the time, and the wound was at once thoroughly washed and a sterile dressing applied. The wound appeared to be healing normally, but on the morning of the third day (i.e., within 48 hours of the bite) he felt very ill on wakening. A severe rigor followed almost immediately, lasting half an hour, with fever beginning at 101° F. (38.3° C.) and reaching 103° F. (39.4° C.) by evening, and associated with severe pains in the limbs and back. Fever continued throughout the following day, with, in addition to generalized muscular pains, severe pain and redness over the right elbow at the olecranon. This first attack of fever lasted for about 48 hours, and on the morning of the third day after the fever started the patient felt much better, except for the painful right elbow. On this day a scanty rash appeared on the dorsal aspects of the feet. He continued to be fairly comfortable for 48 hours, when the first bout was completely repeated, with high fever (103° F.) and severe shooting pains particularly in the region of the right scapula. The rash also spread to involve the back, forearms, and feet. He was admitted to hospital on the seventh day of illness, about 12 hours before the end of the second attack.

On admission the patient looked very ill, with a temperature of 103° F. A fairly extensive maculo-papular rash (no petechiae) was present, most abundant on the forearms, hands, legs, and feet, and less extensive on the forehead and body. The spleen and lymph glands were not enlarged. The leucocyte count was 10,400 (85% neutrophil polymorphs, 14.5% mononuclear cells).

The laboratory investigations are given separately for clearness, but as soon as blood films proved negative for *Spirillum minus* and blood cultures had been taken penicillin therapy was started, with the idea, quickly proved correct, that the infection might be due to *Streptobacillus moniliformis*. There was no scarcity of penicillin, and 500,000 units were given intramuscularly at once. By next morning the temperature was normal, but penicillin was continued intramuscularly in heavy dosage for seven days, a total of over 12,000,000 units being administered. The patient quickly recovered without fever or relapse, and has remained completely well.

Laboratory Investigations

The clinical history suggested rat-bite fever, and the following investigations were rapidly carried out after the patient was admitted to hospital. Six fairly thick blood films were stained and examined for the *Spirillum minus*, with negative results. Two guinea-pigs and two mice were inoculated intraperitoneally with 1 ml. of heparinized blood from the patient; the results are referred to later. Blood cultures were made by dividing 20 ml. of the patient's blood among three flasks containing heparinized horse-heart digest broth, and were incubated at 37° C. After 18 hours a few fluffy granules were seen floating on the top of the layer of sedimented red blood cells, and these were found to consist of tangled chains of pleomorphic coccobacilli. They stained feebly by Gram's method, but strongly with Leishman, Giemsa, polychrome methylene blue, and carbol-fuchsin stains. Subcultures were readily obtained in glucose horse-serum digest broth and on Loeffler's serum medium, while after incubation for a further 48 hours the original cultures showed a mass of "cotton-ball" colonies covering the layer of red cells in the flasks.

The diagnosis was now made, but further bacteriological observations may be briefly but accurately summarized.

The Micro-organism.—This was pleomorphic, slender, motile, and non-sporing; occasionally occurring as short rods but mostly arranged in chains of coccal or coccobacterial bodies or in long continuous filaments spreading across several microscopical fields. All of these forms were present simultaneously, and the long filaments were so interwoven that the question of

branching remained undecided. In young cultures on Loeffler's serum spindle-shaped rods and filaments predominated, the latter being shorter than in fluid media. The filaments also showed central, terminal, or subterminal swellings (moniliform bodies) similar to those seen by one of us (I.R.W.L.) in Levaditi's laboratory in 1936. It was noted that the moniliform bodies tended to disappear in older cultures.

Staining Reactions.—Poor results were obtained with Gram's stain, but on the whole in very young cultures the organism tended to be Gram-positive and in older cultures Gram-negative. With the other stains previously mentioned the staining was irregular, the moniliform bodies being coloured more intensely than the filaments. When stained with Ziehl-Neelsen's carbol-fuchsin the organism was not acid-fast.

Characteristics in Culture.—On solid media no growth occurred on ordinary agar, very scanty growth on 5% blood agar, good growth on 25% horse-serum agar, and abundant growth on glucose-serum agar and Loeffler's serum. The colonies were at first small and translucent, but became granular and rough after several days. Even after 24 hours a number of the colonies were of R type. In deep glucose-serum agar shake cultures mulberry-shaped colonies appeared which were not limited to the aerobic zone. The organism is thus aerobic but a facultative anaerobe. Growth did not appear to be stimulated by increased carbon dioxide pressure. In fluid media abundant growth occurred, as already indicated, when serum and fermentable carbohydrates were present. The sugar reactions were as follows : acid but no gas from glucose and starch, slight acid from lactose and maltose ; no indole formation ; gelatin not liquefied. In fluid media containing carbohydrates subcultures were found to be essential every 48 hours. In carbohydrate-free media the organism can remain alive for five days but is dead in seven days. It is killed by exposure to 60° C. for 20 minutes. The organism isolated was found to be very sensitive to penicillin, all growth being inhibited by 0.01 unit of the drug per 1 ml. of medium.

Animal Inoculation.—The organism is pathogenic for mice, and both animals inoculated intraperitoneally with 1 ml. of the patient's blood died, in 9 and 11 days. Similar inoculations from 24-hour cultures (0.5 to 1 ml.) caused death in four to six days, but no characteristic lesions were observed at necropsy, although heart-blood cultures were positive. Both guinea-pigs and rabbits seem to be insusceptible.

Two additional points of interest may be noted. Attempts to demonstrate agglutinins, both in the patient's blood and in the susceptible animals, failed, for the organism was auto-agglutinable even in media free from carbohydrates. The whole stock of hooded rats from the cage containing the original culprit was examined, and *Streptobacillus moniliformis* was obtained by swabbing the nasopharynx in seven out of the 10 rats examined.

Discussion

There are records of at least five patients previously treated with penicillin, but their illnesses occurred in the time of penicillin scarcity and a much smaller dosage was employed. Kane (1944a, 1944b) reported the first case from Belfast, in which a positive blood culture was obtained only on the 25th day of illness. Gold therapy was tried without success, and penicillin was first used on the 62nd day, just after the beginning of a bout of fever. In all 200,000 units were injected over 48 hours ; but within 12 hours, after only 60,000 units, the fever vanished and convalescence was uninterrupted. Weber and Favour (1945) began penicillin treatment of their patient on the 13th day, using at first 100,000 units a day, reduced to 80,000 units on the third day and continued for 10 days. Fever was abolished only on the seventh day. Altemeier, Snyder, and Howe (1945) gave 302,500 units over 8½ days to a child aged 10 months, 212,500 units to a child of 2 years, and 132,000 units over five days (all the drug available) to a child of 4½ years. Cure was immediate and complete in the first and second cases, but the third child relapsed four days after penicillin was discontinued and blood culture again became positive.

Summary

A case of rat-bite fever due to *Streptobacillus moniliformis* (Levaditi) is reported, developing 48 hours after the bite of a hooded rat.

Treatment with penicillin was completely successful, the disease being cured at once. Much larger dosage, probably excessive, was employed than in the few cases previously described, but the illness was severe and relapse had occurred in the days of penicillin scarcity.

The methods of diagnosis and the characteristics of the organism isolated are briefly described.

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A CASE OF ACUTE DERMATOMYOSITIS

BY

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Acute non-suppurative myositis involving several muscle groups is a rare condition and deserves special notice when it occurs. It was first described in 1887 almost simultaneously by Wagner, Unverricht, and Hepp, but little has been added to our knowledge of the pathology of the condition since that time. The case recorded here is one of the very few in which an organism that might be regarded as causative has been isolated.

The chief clinical features of the disease are widespread oedema of muscle groups associated with intense pain and tenderness, fever, and often inflammatory lesions of the overlying skin. Unverricht coined the term "dermatomyositis" to describe the disease with cutaneous lesions, but this has since been applied to a large and ill-defined group of skin affections associated with muscular swelling or atrophy and with wide variation in the severity and duration of symptoms. Probably some of these are aetiologically different from the acute polymyositis under consideration, but it is possible that allergic sensitivity may be a common factor.

Pathology

The clinical and histological features of dermatomyositis of the acute type suggest that it is infective in origin, but organisms have very rarely been isolated and the standard textbook descriptions of the disease state that the aetiology is unknown. Deák (1931) isolated a haemolytic streptococcus in five cases of "acute haemorrhagic myositis," and Karelitz and Welt (1932) found a haemolytic streptococcus in blood culture shortly before death in one case. Other attempts to demonstrate a causative organism have been unsuccessful. Therapeutic evidence of an infective cause has recently been furnished by the successful treatment of the condition with sulphonamides and penicillin. Clark (1946) reports two cases—one treated with sulphonamides and the other with penicillin. Friedmann and Por (1947) also describe a case successfully treated with penicillin. In none of these, however, was an organism isolated from blood cultures. My case appears to be the first in which an

organism has been grown from a biopsy specimen of muscle.

The affected muscles are usually soft and friable and may be adherent to the surrounding skin and subcutaneous tissues. Later they may become indurated and scarred. The muscles are severely oedematous in the acute stages and areas of haemorrhage may be seen. The skin usually shows macular or petechial haemorrhages and a variable degree of inflammatory infiltration and oedema.

Microscopically there is extensive degeneration of muscle fibres and infiltration with lymphocytic, mononuclear, or polymorphonuclear cells. Occasionally eosinophilic infiltration is seen. The infiltration is usually perivascular in distribution and oedema is intense. The degree of inflammatory change varies with the severity and stage of the disease. In the late stages the muscle fibres may be entirely replaced by fibrous tissue, with perhaps a few areas of cellular infiltration—the picture of "myositis fibrosa." Occasionally the inflammatory changes involve the walls of blood vessels. In some cases the myocardium and muscles of deglutition are affected.

The blood picture is variable. In many cases there is no leucocytosis even in the acute phases of the disease, but in others a moderate or even high polymorph leucocytosis occurs. There is often a moderate degree of splenomegaly.

Differential Diagnosis

The clinical picture, once seen, should be unmistakable. The only condition which at first sight may give difficulty is trichiniasis. The disease was called "pseudo-trichinosis" by Hepp in 1887, but a high degree of eosinophilia is an almost invariable accompaniment of trichiniasis, and microscopical examination of a piece of excised muscle will usually reveal encysted forms of *Trichinella spiralis*. The skin lesions may suggest a diagnosis of the so-called Stevens-Johnson syndrome or of acute lupus erythematosus (Libman-Sachs syndrome), but myositis is not associated with these conditions. Polyarteritis nodosa may have to be considered in a few cases, particularly as some degree of myositis may occur in this disease as well as skin lesions. There should be no difficulty in distinguishing the disease from acute suppurative myositis.

Prognosis

The disease has had a high mortality in the past, but few cases have been recorded since sulphonamides and penicillin have been available, and it seems probable that chemotherapy may change the outlook considerably. Recurrences after apparent recovery are common. Many of the patients who survive are left with muscular atrophy or contractures and sclerodermia. It is possible that myositis fibrosa is a terminal stage of the disease. Calcinosis is said to be a sequel in some cases. When death occurs it is usually due to involvement of the muscles of respiration or deglutition and sometimes of the myocardium.

Case Report

A boy, aged 15, was admitted to Crewe and District Memorial Hospital on Feb. 16, 1947. The illness had started seven days before with sore throat followed by pain in the right ear. A few days later a painful swelling appeared in the right arm above the elbow, with oedema of the right pinna and bulging of the right eardrum, red tonsils and fauces, and slight cervical adenitis. The right arm was grossly oedematous from wrist to shoulder. Some swelling was also present in the left arm above the elbow, with extreme tenderness. Temperature 101° F. (38.3° C.), pulse 120, respiration 24. No cardiac murmurs; blood pressure 125/75; urine normal. Leucocytes 30,000 per c.mm.—polymorphs 80%. Penicillin, 20,000 units three-hourly, was begun. The muscular swelling spread rapidly to both legs and the face, and the limbs and trunk became covered with a macular erythematous rash and scattered purpuric patches. Many of the purpuric areas became confluent, and as they faded more appeared. The play of the colours known as erythema iris was seen in the skin lesions. Bullae containing serous fluid appeared on the legs from time to time. The spleen became palpable and tender during the second week of the illness. The patient was immobilized by intense pain, which was only partly relieved by morphine. No improvement occurred until March 3. After this the skin lesions faded, leaving a brownish pigmentation. Pyrexia of 101°–102° F. (38.3°–38.9° C.) continued and gradually returned to normal on March 28. Penicillin was discontinued on March 16, a total of 3,300,000 units having been given. On March 25 the leucocytes were 5,000 per c.mm.—polymorphs 65%. Blood cultures were sterile on three occasions—once before treatment with penicillin and twice during treatment. Culture of fluid from a bullous skin lesion was also sterile. The patient was discharged home on April 16. The muscles of his arms and legs were very wasted and some contracture at the knees and elbows was present. Massage and exercises corrected these deformities, and by July 1 he was able to work as a packer. The muscular volume had returned to normal and there was no loss of motor power.

The patient was again admitted to Crewe Hospital on Sept. 20, 1947, with a severe recurrence of the polymyositis, similar to the first attack, but more intense. The spleen was again enlarged and tender, and the polymorphic skin lesions more widespread. Temperature 103° F. (39.4° C.), pulse 120, respiration 24. Blood culture was again sterile and remained so after incubation for 18 days. Leucocytes amounted to 25,600 per c.mm.—polymorphs 83%, eosinophils 3%. Penicillin, 30,000 units three-hourly, was begun. No improvement occurred during the next week, and the patient was transferred to the Staffordshire General Infirmary on Sept. 26. A diagnosis of dermatomyositis still seemed the most probable one, but the outlook appeared hopeless. A piece of muscle was excised from a tender oedematous site in the right adductor longus on Sept. 29 to exclude the possibility of trichiniasis or polyarteritis nodosa. Half of this piece was kept for histology and half was placed into broth and incubated. By Oct. 2 this culture yielded a pure and heavy growth of *Streptococcus viridans*. Two further blood cultures and culture of oedema fluid from the leg were sterile. Leucocyte counts were as follows during the illness.

Date	Total Leucocytes per c.mm.	Polymorphs %	Lympho-cytes %	Monocytes %	Eosinophils %
1/10/47	63,600	89	8	3	
3/10/47	59,800	86	11	3	
7/10/47	43,600	83	10	6	
13/10/47	15,600	78	17	3	
27/10/47	15,600	46	51	3	

In spite of this intense leucocytosis there was no evidence of suppuration at any time. Through an unfortunate laboratory error the sensitivity of the *Str. viridans* to penicillin was not determined, but the penicillin dosage was increased to 80,000 units three-hourly on Oct. 3, and sulphadiazine, 1 g. four-hourly, was also begun. The sulphadiazine was stopped on Oct. 14 after a total of 70 g. had been given, and the penicillin was stopped on Oct. 18 after a total of 8,120,000 units. "Benadryl" in doses of 200 mg. daily had been given for four days from Oct. 2, but without visible effect on the skin lesions or oedema. The skin lesions and oedema began to diminish on Oct. 13 and the temperature had become normal by Oct. 23. Electrocardiograms on Oct. 3 and Nov. 4 showed no abnormality apart from low voltage. The urine showed no abnormality throughout the illness apart from a trace of albumin. The patient returned home on Nov. 16. The muscle-wasting was more pronounced than in the previous attack, but there has since been a rapid recovery.

Dr. A. J. McCall has kindly given the following report on the sections of excised muscle. "The muscle shows numerous inflammatory lesions in which the muscle fibres are separated by collections of histiocytes and lymphocytes, with only occasional eosinophils and polymorphs (Figs. 1 and 2). In some of these areas there is albuminous coagulum, but frequently

there is none. The lesions are often perivascular, and they then tend to be spindle-shaped. One or two small arteries show what is probably oedema of the vessel wall, with occasional inflammatory cells in the outer media, but there is no necrosis or thrombosis. Some muscle fibres appear normal, but others show damage varying from oedema to complete destruction and replacement by granular eosinophil material. Proliferation of sarcolemma nuclei is sometimes seen. The frequency of the lesions varied considerably in sections taken from different levels in the block, and it is evident that they are patchy in distribution. No parasites or organisms could be found in any of the sections."

FIG. 1.—Section of muscle showing cellular infiltration and damage to muscle fibres. (× 80.)

FIG. 2.—Showing perivascular infiltration and slight inflammatory reaction in outer coats of small artery. (× 250.)

Discussion

The clinical manifestations of acute dermatomyositis have been well recognized for more than sixty years, but although these are suggestive of a fulminating bacterial infection it is remarkable that an organism has been isolated on so few occasions. The isolation of a possibly causative organism in this case is so unusual that it must be examined with some scepticism.

It seems improbable that the *Str. viridans* was an accidental contaminant of the culture, but lesions of the severity described are by no means a characteristic of *viridans* infections. They are never seen, for instance, in bacterial endocarditis due to this organism, even when a considerable degree of septicaemia is present. There was no evidence of cerebral, renal, or pulmonary lesions, which would be expected in a fulminating bacterial infection with such an intense leucocytosis. The localization of the lesions to the muscles and skin is the most remarkable feature of the case.

The similarity of the clinical picture to that of acute disseminated lupus erythematosus (Libman-Sachs syndrome), acute erythema multiforme of the Stevens-Johnson type, and polyarteritis nodosa has been mentioned, and it is possible that they also have a similar aetiology. In the past these diseases have been thought to be due to bacterial infection, but most authorities now regard them as manifestations of allergic hypersensitivity, in some cases to bacterial antigens. Ophüls (1923) first suggested that polyarteritis nodosa might be due to allergic sensitivity to streptococci, and Rich (1946) now emphasizes that substances of widely differing chemical nature must be added to the list of sensitizing antigens capable of producing vascular lesions. This conception of allergic hypersensitivity has also been applied to the Stevens-Johnson syndrome (Sutton and Sutton, 1939, quoted by Nellen, 1947) and to the Libman-Sachs syndrome (Fox, 1943).

Banks (1941) first discussed the question of whether there is a common denominator between sclerodermia, dermatomyositis, acute lupus erythematosus, and polyarteritis nodosa. He draws attention to the overlapping of the morbid anatomical features in all these conditions, particularly of the arteriolar changes. The very slight histological evidence of vascular damage in this case is an inconclusive finding, but the severe recurrent symptoms localized to muscles and skin and the slow response to penicillin and sulphadiazine could be explained by the assumption that the disease was due to an allergic response to the *Str. viridans*.

Summary

Two severe attacks of dermatomyositis in a boy aged 15 are described. After many unsuccessful attempts to grow an organism from the blood and oedema fluid *Str. viridans* was obtained in pure culture from a muscle biopsy during the second attack.

A piece of excised muscle showed patchy inflammatory changes with perivascular cellular infiltration and necrosis of muscle fibres in some places. Only slight infiltration of arterial walls was seen in the sections examined.

Complete recovery from both attacks occurred. In the first there was a slow response to penicillin alone, and in the second a slower response to larger doses of penicillin and sulphadiazine.

It is suggested that the severe symptoms were due to an allergic reaction in muscles and skin to the *Str. viridans* infection and that a clinical and possibly an aetiological similarity exists between dermatomyositis, polyarteritis nodosa, acute disseminated lupus erythematosus, and erythema multiforme of the "Stevens-Johnson" type.

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POST-PRANDIAL SYMPTOMS FOLLOWING PARTIAL GASTRECTOMY

BY

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While the results following subtotal gastrectomy for ulcer are generally excellent, in a small proportion of cases there develop post-prandial symptoms which may persist for many months. Such post-prandial upsets after gastrectomy have been described in British, German, and American literature, and frequent attempts have been made to relate these symptoms to changes in sugar levels in the blood. Lawrence (1936) noticed that after such surgical procedures patients developed hyperglycaemic then hypoglycaemic sugar levels following ingestion of glucose. Evensen (1942) found that 34 out of 95 cases treated by partial gastrectomy developed unusually low blood-sugar levels after meals. Adlersberg and Hammerschlag (1947) divided such upsets into two groups—early and late. The early symptoms (sense of pressure and fullness in the epigastrium) they attributed to the rapid emptying from the stomach remnant. Later symptoms (palpitations, headache, dizziness, and perspiration) they believed to be due to chemical factors, especially hypoglycaemia. Gilbert and Dunlop (1947) believed the symptoms were due to hypoglycaemia, and they found that ephedrine administration lessened the upset. They suggested that the development of insulin sensitivity was a causal factor.

Present Investigation

Twenty-four cases were studied—23 men and one woman. All had had subtotal gastrectomy for duodenal or simple gastric ulcer. The type of operation performed in every case was a gastrectomy, removing three-quarters of the stomach and the first inch of the duodenum, with an antecolic anastomosis. No valve mechanism was formed.

The Nature of the Symptoms.—In mild cases (the majority) the patients complain of a heaviness and fullness in the epigastrium, accompanied by a curious sense of muscular or body fatigue, and want to sit down ; in more severe cases they may have to lie down and may fall asleep. A flushing of the skin may occur and the patient often "feels hot" and may actively perspire. Giddiness and palpitations often occur. Such symptoms were present in all 24 cases. To this list of symptoms must be added bilious vomiting, which occurred in two of the cases. These two patients had all the other symptoms, but in addition after meals they felt very upset and wanted to vomit. They usually vomited about 30 to 45 minutes after meals, and thereafter felt very well and were able to go about their business. The vomited material consisted either of food heavily bile-stained or, as often, of 1½ pints (0.85 litre) of unmixed pure bile.

Time Interval between Operation and Symptoms.—In every case the symptoms started either while the patient was in hospital or as soon as he went home and began to live a normal life. In no case was there a time interval of some weeks, such as has been described by those who believe the condition to be due to the development of insulin sensitivity.

Time of Onset of Symptoms in Relation to Meals.—In each case the symptoms started almost immediately after meals or, indeed, while the patient was still eating. The upset usually lasted 20 to 30 minutes. The rapidity of onset suggested a mechanical causation, and in nearly every case the symptoms could be brought on rapidly by eating more quickly, and by giving a larger meal the symptoms usually increased in severity. In no case did a group of late symptoms appear 1 to 1½ hours after meals.

Type of Meal which Caused the Symptoms

In all 24 cases a careful study was made of the type of food and the amount taken at each meal in the day, and a rough measure of the total bulk of each meal and its total carbohydrate content was made. In 23 cases the symptoms appeared only after "the big meal"—i.e., the most bulky meal of the day. In almost all of these cases the carbohydrate content of "the big meal" was considerably less than the carbohydrate content of another meal in the same day which produced no symptoms. Indeed, the patients themselves in most cases clearly realized that it was the bulkiness of the meal which troubled them, and many noted that by missing the soup one day, and doing without pudding the next, they could avoid such symptoms altogether. In other words, the incidence of symptoms depended on the total amount of food eaten and not on its carbohydrate content.

In order to clarify still further the question whether the symptoms were due to bulk or to carbohydrate content each patient was given 50 g. of glucose in water and the severity of the symptoms and their time of onset, etc., were recorded ; the blood-sugar levels were estimated by MacLean's method. On the following day the patient was given a bulk meal containing scarcely any carbohydrate (about 6 g.) and the severity and time of symptoms were again recorded. The blood-sugar levels were again estimated to check the fact that there was no rise in the blood sugar. In 16 of the 24 cases the symptoms were more pronounced after this bulk meal than they were after the ingestion of 50 g. of glucose in water. In four cases the severity of the upset was equal, and in four cases the 50 g. of glucose caused more upset than the bulk meal. In short, it was again shown that it was the bulk and not the carbohydrate content of the meal which mattered. It is, however, interesting to note that after these bulk meals the blood-sugar level rose to a moderate extent in most cases. Indeed, blood-sugar levels were recorded which were higher than one would expect after a meal of such small carbohydrate content. It will be suggested that this may be due to stimulation of the sympathetic system caused by distension of the gut, bringing about an adrenaline effect.

Relation of Symptoms to Blood-sugar Level

It has already been stated that each patient had blood-sugar estimations done after the ingestion of 50 g. of glucose in water, and the time during which the symptoms were present was carefully noted. The results are shown in the accompanying Table. By graphing the blood-sugar levels and marking on the graph the period of upset the following points were noted.

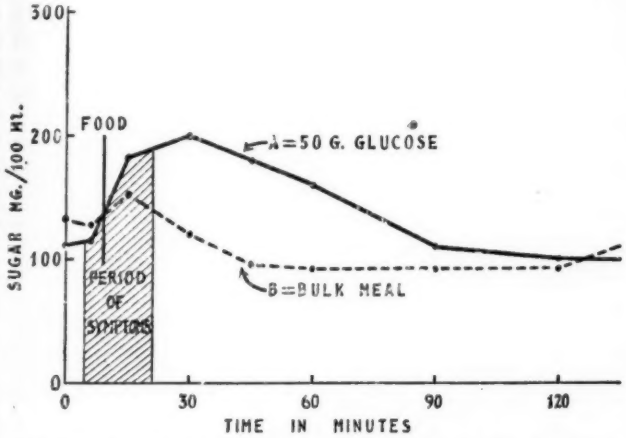
The symptoms appeared long before the sugar level in the blood had reached its peak. The symptoms were usually over before the blood-sugar level started to fall or before it fell below normal limits. In short, the symptoms appeared during the period of hyperglycaemia and the symptoms had

Blood-Sugar Levels after 50 g. of Glucose by Mouth
(The Readings in bold type occurred during the symptoms)

Case No.	Blood-Sugar Readings in mg. per 100 ml.								
	Before Meal	5 Min. After	10 Min. After	¼ Hr. After	½ Hr. After	¾ Hr. After	1 Hr. After	1½ Hr. After	1¾ Hr. After
1	88	95	**115**	**130**	**173**	199	106	104	112
2	100	110	**110**	**175**	**286**	156	100	88	98
3	89	**128**	**136**	**150**	**248**	187	123	100	80
4	103	166	**180**	**200**	**282**	120	80	93	86
5	120	100	**160**	**178**	**248**	147	70	90	89
6	86	90	100	121	**128**	**130**	196	58	82
7	48	50	**70**	**92**	**116**	50	62	186	64
8	90	100	116	**138**	**210**	**256**	198	110	90
9	100	106	130	**172**	**211**	190	100	90	86
10	102	90	112	**156**	**191**	148	80	100	92
11	86	92	126	**180**	**243**	110	120	97	106
12	108	102	**130**	**162**	**224**	160	111	126	108
13	117	127	**142**	**155**	198	133	60	50	46
14	112	**115**	**140**	**182**	200	180	158	138	112
15	84	92	100	**154**	**186**	64	100	103	107
16	78	84	116	**162**	**171**	**100**	**87**	103	82
17	104	100	115	**158**	**180**	82	106	**104**	109
18	68	71	86	**173**	**210**	70	162	58	89
19	96	102	120	**186**	80	112	80	94	90
20	106	100	**141**	**195**	**166**	84	92	110	96
21	86	92	**112**	**138**	**173**	**184**	101	106	100
22	105	116	**165**	**179**	**267**	143	70	83	66
23	95	106	**173**	**182**	**226**	**61**	102	98	93
24	80	109	127	**158**	**194**	**69**	105	98	86

passed off before low levels of blood sugar were recorded. Furthermore, exactly the same symptoms were produced, often of greater intensity, with the bulk meals, where the blood-sugar levels showed a less marked rise and fall. An illustrative case, with typical blood-sugar curves, is noted below.

A man, aged 40, had a subtotal gastrectomy for duodenal ulcer 18 months ago. Since operation he has been complaining of fullness in the epigastrium for 20 minutes after meals, with weakness and sweating. Palpitations are common and giddiness is often present. This comes on after his dinner at midday, which usually consists of soup, then fish or meat. If he takes any pudding of any sort his symptoms are much worse.



Curve A shows blood-sugar levels after 50 g. of glucose by mouth. Symptoms were slight. Curve B shows blood-sugar levels after a bulk meal with almost no carbohydrate. Symptoms were pronounced after this meal. The period of symptoms is shaded. During this period blood-sugar estimations were made every five minutes.

Discussion

Post-prandial symptoms following partial gastrectomy are not likely to be due to hypoglycaemia. In all 24 cases they occurred in the hyperglycaemic stage. The symptoms were quite often over before the sugar level stopped rising. Even when hypoglycaemic curves were produced the symptoms did not coincide with that period, and a similar set of symptoms of at least equal intensity could be produced in the same patient with a bulk meal with a much smaller rise and fall in the sugar levels in the blood.

That these symptoms are due to mechanical distension of the gut is suggested by the following facts: (*a*) The rapidity of onset of symptoms following the meal suggests a mechanical cause. (*b*) It was the major meal of the day which gave the trouble in 23 cases, and patients usually knew that they could avoid or lessen the upset by taking fewer courses. As has been said, this major meal in most cases had a smaller carbohydrate content than at least one other meal of the day which produced no symptoms. (*c*) In two-thirds of the cases the bulky low-carbohydrate meal produced more symptomatic upset, with only a moderate change in blood-sugar level, than did the 50 g. of glucose which caused a marked rise and fall in the sugar levels. Further, the very fact that the symptoms were the same in both cases suggests a mechanical basis.

It should be added that in the four cases in which the 50 g. of glucose caused more upset than the bulk meals no satisfactory explanation was found. These patients had no marked hypoglycaemia, and again the symptoms occurred in the hyperglycaemic stage. These four patients had insulin-sensitivity tests carried out. No hypersensitivity was found.

If the post-prandial upset is due to mechanical distension of the gut it is likely that the afferent pathway for this is in the sympathetic-nerve fibres and not the vagi. This is suggested by the work of Andrus (1947), who performed a preliminary gastrostomy on a patient with carcinoma of the oesophagus. At a later operation he did a bilateral vagotomy. By passing a cystoscope through the gastrostomy tube he was able to test the stomach wall for different types of sensation before and after vagotomy. He observed that most sensations, such as feelings of distension, heat and cold, pain, etc., were unaffected by vagotomy. Moore *et al.* (1947) also observed such post-prandial symptoms following vagotomy.

Finally, the symptoms themselves suggest stimulation of the sympathetic system. The weakness, giddiness, perspiration, etc., are not unlike the effects produced by adrenaline and ephedrine. In this respect it is interesting to note that the pulse rate increased by 10 to 20 beats a minute in all 24 cases during the upset. Furthermore, the rise in the blood-sugar level after a meal containing very little carbohydrate might be explained by an adrenaline effect following stimulation of the sympathetic nerve by mechanical distension of the gut.

I would like to thank Professor Illingworth for his kind help and encouragement and for his many useful criticisms.

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In Circular 150/48 (dated Aug. 20, 1948) the Ministry of Health has given some advice to County and County Borough Councils about their functions under the National Assistance Act, 1948. There are not to be any changes in the system of registration of blind persons or of the arrangements under which the Regional Associations for the Welfare of the Blind maintain regional registers. The certification of blindness will be part of the local authority's duty under the National Assistance Act and not under the National Health Service Act, and the Form B.D.8 will continue to be used. Local authorities are to pay the regional boards for certificates provided by specialists employed by the board, but where the specialist does the work outside his employment by the board the local authority will pay him direct. In addition to persons registered as blind within the meaning of Section 64 of the National Assistance Act, local authorities are now urged to keep an " observation register " of those who are substantially and permanently handicapped by defective vision (" partially sighted persons "). Local authorities should keep these patients under review and make sure that they are obtaining the treatment they may need through the National Health Service.

PUERPERAL SEPTICAEMIA DUE TO PS. PYOCYANEA: FAILURE WITH STREPTOMYCIN

BY

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AND

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Infections of the urinary tract with *Pseudomonas pyocyanea* have in many instances been successfully treated with streptomycin (Alexander, 1946; Hamre *et al.*, 1946; Keefer *et al.*, 1946). In the case described below, in which both the blood and the urine were infected with the organism, the patient died despite the sterilization of the blood and the urine with this chemotherapeutic agent.

Case Report

A female aged 28 was admitted to the Farouk I University Hospital on Jan. 26, 1947, complaining of excessive bleeding from the vagina for 28 days and backache. She was syphilitic, and had had an early abortion five months before admission, with amenorrhoea two months before the onset of her illness. She gave a history of recurrent attacks of salpingitis for seven years, for which she had had 60 administrations of short-wave therapy. Severe aplastic anaemia with marked leucopenia and gingivitis persisted till death—after 36 days in hospital. Blood examination: Hb 40% (Sahli); R.B.C. 2,000,000 per c.mm.; leucocytes 1,000 per c.mm. (polymorphs, 20%; lymphocytes, 72%; monocytes, 8%); platelets 13,000 per c.mm.; bleeding time, nine minutes; coagulation time, one minute. The urine contained a trace of albumin and a few hyaline casts. A Friedman test three days after admission was negative.

A low-grade pyrexia developed the day after admission, but the temperature became normal after five days' treatment with a total of 20 g. sulphadiazine orally, and remained normal for four days. It then rose, and penicillin, 5,000,000 units, was given intramuscularly over 17 days. This had no effect on the pyrexia. Penicillin was stopped when a blood culture yielded *Ps. pyocyanea*, and streptomycin, 1 g. per day, was given intramuscularly every three hours until death seven days later. Penicillin was resorted to in addition to the streptomycin the day before death, because the patient was thought to have developed pneumonia. The temperature remained high until death.

Bimanually the uterus was felt to be retroverted and retroflexed and could not be corrected on account of tenderness and probable adhesions. It was rather enlarged. The os was closed and the lower segment slightly softened. On the right of the uterus a tender mass the size of a hen's egg was felt, with pulsating vessels on it.

Four days after admission the os was dilated one and a half finger-breadths; the uterine cavity was filled with blood clots, but no products of gestation were found. The patient had probably aborted the day before. There were signs of moderate localized pelvic peritonitis.

The severe anaemia was treated with iron, liver extract intramuscularly, and blood transfusion—11 litres (19.4 pints) of blood. For the marked leucopenia, which was accompanied by gingivitis (? agranulocytosis), the patient took pyridoxin every other day.

Bacteriological Examinations

The first blood culture, made 11 days before death while the patient was on penicillin, yielded *Ps. pyocyanea*, five colonies per ml. of blood. When the result was known blood cultures (eight) were made daily until death. The first showed no signs of growth (turbidity) before 48 hours. Surface pellicle developed in both the aerobic and the CO_2 tubes. The top centimetre in the CO_2 tube was tinged pale green. No pigment developed in the aerobic tube. This phenomenon was observed in all subsequent positive blood cultures. Carbon dioxide seems to enhance pigment production (Khairat, 1940).

Ps. pyocyanea was grown from the first three blood cultures; the last two gave one colony per ml. of blood. The blood became sterile the third day after streptomycin had been started. *Bact. coli* was grown from the eighth (and last) blood culture, taken the day before death—presumably an ante-mortem invasion. (*Bact. coli* was grown in pure culture from the heart blood two hours after death.)

The patient's serum taken a week before death agglutinated a living suspension of the first blood culture strain (washed off an agar slope) to a titre 1 : 320. A suspension killed by heat (60° C. for 30 mins.) failed to agglutinate even in low serum dilutions. (Final serum dilutions from 1 : 5 to 1 : 1,280 were put up.) Agglutination of the living suspension took place at 55° C. (water bath) after 18 but not four hours.

A throat swab taken six days before death was negative for *Ps. pyocyanea*, and negative also for haemolytic streptococci. A *pyocyanea* bacillus was grown from the stools in small numbers seven days before death. Four urine cultures, taken aseptically by catheter, were made every other day the week before death. The first, taken the day streptomycin was started, yielded *Ps. pyocyanea*, eight colonies per loopful of the thoroughly shaken urine, and also *Bact. coli*, six colonies per loopful (on blood agar; the loopful was approximately 1/150 ml.). The two urine cultures which followed were sterile, probably because of the streptomycin. From the last urine culture, taken the day before death, both organisms were grown. *Ps. pyocyanea* and *Bact. coli* in equal numbers were grown from three cultures from the cervix uteri taken 7, 5, and 2 days before death.

Necropsy

The uterus was retroverted and surrounded by fibrous adhesions that fixed it. It was almost completely involuted. On the right side there was a tubo-ovarian mass. The right ovary was cystic and contained thick sanguineous fluid. The small intestines showed septicaemic petechiae along the whole mucosa. The lower part of the ileum close to the ileo-caecal junction was markedly congested and almost gangrenous in appearance, but the loop was free in the abdomen and had no adhesions. (The patient passed no motions for four days before death.) The heart valves were free. The pericardium contained much straw-coloured clear fluid.

Post-mortem cultures were made two hours after death from the heart blood, pericardial fluid, cut-surface of lung, cervix, uterine cavity, and from the thick sanguineous fluid in the cyst of right ovary. *Bact. coli* was obtained in pure culture from all these sites; the pericardial fluid and the cut surface of the lung also yielded *Ps. pyocyanea*. The three blood-culture *pyocyanea* strains, the three cervical ones, the strain from the stools and the urine, and the two post-mortem strains were all agglutinated to the same titre (1 : 320) by the patient's serum. Pooled normal human sera did not agglutinate any of them.

Summary

Penicillin had no effect on *Ps. pyocyanea* bacteraemia or bacilluria. Streptomycin, 1 g. daily, sterilized the blood and the urine by the third day, but did not save the patient, who died probably of paralytic ileus or from agranulocytosis.

We wish to thank Prof. Aly Bey Hassan for the gift of streptomycin and for his interest.

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The National Under Fourteens' Council has issued an illustrated pamphlet entitled "Junk Playgrounds" describing how bomb sites and other derelict places may be made into suitable playgrounds for children to give them the opportunity of making small huts in gardens. This scheme has been very successful in Copenhagen, where it is claimed that juvenile delinquency has been eradicated by such measures. The Council is appealing for funds, and those interested should write to the Organizing Secretary at the Mary Ward Settlement, Tavistock Place, London, W.C.1.

LAURENCE - MOON - BIEDL SYNDROME

BY

GRAHAM H. ANDERSON, M.B., Ch.B., F.R.F.P.S.G.

The association of retinitis pigmentosa with polydactylism was recorded in 1860 by Laurence and Moon and the Fröhlich syndrome in 1901. Biedl in 1921 described the pentad of polydactylism, obesity, hypogenitalia, retinitis pigmentosa, and mental retardation, with a familial occurrence; the association being now known as the Laurence–Moon–Biedl syndrome. Variants have also been described by Biesmond, Van Bogaert, and by Delhaye in which coloboma of the iris replaced the retinal degeneration. Graefe in 1866 described optic atrophy as complicating oxycephaly, but not of the pigmentary degenerative type (Duke-Elder, 1940; Ridley and Sorsby, 1940). Mann (1937), however, records oxycephaly as one of the skeletal abnormalities which may be present with the syndrome.

Retinitis pigmentosa occurs much more often as an isolated disability than in combination with other disabilities. Nettleship worked out many pedigrees in which there was no other defect. Usher obtained similar results when searching especially for combined defects. In the Eugenics Laboratory Memoirs (1922) is reported a series of 914 cases, in 656 of which the patients suffered from retinitis pigmentosa alone. Deaf-mutism, or mental deficiency, occurred in 96 cases (10.41%), and was the commonest associated affliction. In only 9 cases (less than 1%) was polydactylism noted; such a combination is therefore rare. The genealogical tables constructed showed that retinitis pigmentosa could apparently be transmitted as an inherited Mendelian dominant, or recessive, or sex-linked character, whereas the Laurence–Moon–Biedl syndrome occurred as a recessive Mendelian type (Eugenics Laboratory Memoirs, 1922).

Pathological evidence of pituitary abnormality has generally been indefinite and disappointing. Dax (1938), however, reported the presence in the blood and urine, but not in the cerebrospinal fluid, of a substance which was melanophore-expanding in frogs and caused a visible darkening of the skin on injection. This substance could be demonstrated in cases of retinitis pigmentosa, with or without other abnormalities. It was also present in conditions of known pituitary stress, such as pituitary tumours, hyperthyroidism, and pregnancy. Similarly prepared extracts from healthy controls or other endocrinal upsets did not contain this substance. The presumption of a hypophysial–diencephalic lesion has thereby gained some experimental justification, but vascular phenomena, according to earlier Italian workers, also play an important part in the pigmentary degenerative process (Dax, 1938).

Case Report

A spinster, aged 45, was admitted to ward 2 of the Western Infirmary, Glasgow, complaining of severe headaches occurring at frequent intervals over a period of two years. At birth rudimentary sixth digits were present on each extremity, but these spontaneously wasted and disappeared during her infancy. Soon after attending school she discovered her eyesight was defective, the defect being more pronounced at night. Ophthalmological examination at this time led to a diagnosis of retinitis pigmentosa. She had always been a fat child but less than average in height, and at the age of 11 she weighed 13 st. (82.5 kg.). Menstruation began when she was 13, a regular 4/28-day cycle continuing up to the time of writing.

Eczema first appeared at the age of three months and asthmatic attacks when she was four years old. Both have occurred intermittently throughout her life. Two years before admission she began to suffer from headaches, usually present on waking but sometimes developing later in the day. The occipital region was generally affected, with occasional spread over the vertex and forwards to the frontal area. They were not accompanied by nausea, vomiting, or any increased visual disturbance, nor were they induced by those foods which she had learned by experience to regard as provoking attacks of eczema or asthma.

On examination the patient was seen to be obese, but not grossly so. Her face was florid, with marked hirsutism but no congested veins. Her skin was dry and scaly, with one small weeping area on the dorsum of the hand. Small scars were present at the lateral bases of the fifth digits. Her skull was of a pronounced oxycephalic shape. Her weight was 12 st. 11 lb. (81.2 kg.), her height 5 ft. 4½ in. (1.64 m.).

Clinical and *x*-ray examination of the lungs was compatible with the asthmatic history. The blood pressure was 175/105 mm. Hg. Clinical and special methods of examination revealed no other abnormalities in the cardiovascular system. Blood examination showed: Hb, 75% (Sahli); red cells, 3,800,000 per c.mm.; white cells, 6,800 per c.mm.; films—normal cell pattern; normal sugar-tolerance curve—fasting, 0.100%; half hour, 0.170%; 1 hour, 0.180%; 1½ hours, 0.100%; 2 hours, 0.090%. No sugar in the urine, nor was any chemical or microscopical abnormality detected. Average daily volume was 49 oz. (1.39 litres). Average daily excretion of 17-ketosteroids was 3.7 mg. (average normal, 13 mg. with limits 4–23 mg.; Hadfield and Garrod, 1947). The B.M.R. was −19.5%. Examination of the C.S.F. showed: pressure, normal; cells, 2 per c.mm.; Wassermann reaction and colloidal gold tests (Lange), negative; no precipitation to Pandy's or Nonne Apelt tests. Hearing was normal with both ears. Sight: large objects seen at 6 ft. (1.83 m.) but without definition; individuals not recognized close up; strong contrast colours distinguished close up. Fundi: peculiar degeneration and pigmentary deposits of retinitis pigmentosa. No papilloedema or changes in vessels. Radiographs revealed that the pituitary fossa was smaller than usual, that there was no bony abnormality, that the middle phalanges of both fifth fingers were "dumpy," and that there were rudimentary accessory digits at both fifth toes.

Intellect:—The patient was alert and quickly recognized voices. Her interests were limited, but this was clearly the result of her defective vision and not due to any mental defect. Her knowledge and understanding of everyday events, as reported on the radio, was quite up to normal standards.

She could not trace back any relative with blindness or polydactylism. There has been no Jewish racial mixing in the family so far as she is aware. No abnormality was found on examination of her mother and sister, the only relatives available.

Discussion

The above case is incomplete in two respects. Mental retardation was not an obvious feature, and amenorrhoea, which would be anticipated with hypogenitalism, was not present, an average normal menstrual cycle occurring during the patient's stay in hospital. The hirsutism was limited to the face and did not encroach on the male distribution of trunk and arms. The possibility of virilism (adreno-genital or pituitary basophilism) is further negatived by the low excretion rate of urinary androgenic (ketosteroid) substances. Such low values are obtained in hypopituitarism.

A benign myxoedematous state, induced by inadequate stimulation of the pituitary to the thyroid gland, readily affords an explanation of the lowered metabolic rate and anaemia. Hypertension is not uncommon in myxoedema, and the headaches symptomatically conform to the pattern associated with increased blood pressure. I have not traced an association with eczema and asthma in previous cases; thus an unlucky coincidence seems to have occurred in this patient's case.

The failure to elicit a family history is not surprising in a Mendelian recessive type, as several generations may elapse in human inheritance before suitable conditions (absence of a neutralizing dominant or other less easily explained factor) occur. An isolated case cannot therefore

be assumed, but only that previous members of the family showing this syndrome have been buried even beyond the knowledge and memory of those still alive. Sufferers from this syndrome are of course unlikely to marry, and even if they do so are unlikely to have children—a factor which of itself curtails the passing on of the defective gene except as a latent recessive type.

My thanks are due to Dr. D. K. Adams for permission to publish this report.

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Medical Memoranda

A Fatal Case of Solanine Poisoning

Of the *Solanaceae*, *A. belladonna* (deadly nightshade) has long been recognized as having very poisonous properties owing to the high content of atropine in the plant. The commoner members of the nightshade genus—*S. dulcamara* (woody nightshade) and *S. nigrum* (black nightshade)—are generally regarded as being harmless, although the alkaloid solanine has been recovered from the berries of these plants and has been shown to have toxic properties in experimental animals and to a less extent in human beings. We can trace only one authenticated case of death following ingestion of the red berries of the woody nightshade and one fatal case of black nightshade poisoning (Taylor, 1875).

CASE RECORD

A female child aged 9 years was admitted to hospital on the evening of Aug. 13, 1948, suffering from vomiting, abdominal pain, and distressed breathing. Her home was on the outskirts of a town and she was apparently in the habit of eating berries from hedges and from the embankment of a disused railway near her home. She had eaten berries on several occasions during recent weeks, the last occasion being three days before admission. The following day she had felt unwell but had improved. On the day before admission she had been taken ill with vomiting and had vomited "coffee-ground" material four times during the five hours before admission.

The child responded weakly to questioning and complained only of abdominal pain and thirst. She looked exhausted, the skin was pallid and dry, the expression anxious. There were slight restless movements of arms and head. She was not delirious. A feature which remained marked throughout was dyspnoea. Inspiration was short and gasping; expiration was prolonged and active and accompanied by a sigh. The respiratory rate was 32 per minute.

The pupils were of normal size and reacted to light. Although the child was dehydrated the tongue was moist. Examination of chest and abdomen revealed nothing of significance. The extremities were warm. There was neither paraesthesia nor paralysis. Temperature 96.4° F. (35.8° C.), pulse rate 140 per minute, blood pressure 120/88.

A provisional diagnosis of vegetable irritant poisoning with central effect on the nervous system was made, and treatment was immediately instituted. This included stomach lavage, soap and water enemas, nikethamide 1.7 ml. hourly, and latterly oxygen. Fluids were given by mouth and per rectum. Some improvement in her general condition was maintained for 24 hours, but she later became weaker and more cyanosed and her respirations became very feeble. Death occurred in the morning of Aug. 15, 1948.

A post-mortem examination was carried out two hours after death. The main feature was an acute inflammation of the mucosa of the stomach and intestines, the inflammation decreasing in intensity towards the distal coils of small intestine and caecum. There were small haemorrhages in the mucosa of stomach and jejunum. The stomach contained about 1 pint (568 ml.) of dark brown fluid, and dark greenish-brown semi-solid material was present in the upper coils of jejunum. The bowel contents decreased in amount and became paler towards the distal end of the small intestine. The contents of the colon were normal in appearance. Small fragments of the skin of a berry were found microscopically. The rectum was empty. Other abdominal organs appeared healthy. Thoracic organs, with the exception of the lungs, which were congested and oedematous, appeared healthy. The brain was normal in appearance. Microscopically the liver showed moderate fatty infiltration and necrosis.

The post-mortem findings were regarded as being consistent with death from respiratory failure following the ingestion by mouth of some poisonous substance, and specimens of stomach and intestinal contents and liver were submitted for analysis. No alkaloid was found in the liver by the normal Stas-Otto process. A special search was made for solanine, and from about one-third of the liver 7 mg. of crude alkaloid was isolated, which on recrystallization from alcohol gave a product giving characteristic tests for the solanine complex.

A search at the place where the child played revealed the presence of masses of woody nightshade entangled with blackberries. The child's symptoms, the finding of solanine in this organ and the presence of much woody nightshade where the child played provide evidence that death was almost certainly due to poisoning by *Solanum dulcamara*.

DISCUSSION

Fatal cases of solanine poisoning are very rare, and although much work has been done on the potato as a source of the poison very little appears in the literature concerning the other two common sources, *Solanum dulcamara* and *Solanum nigrum*. It is known that the potato varies greatly in solanine content with the season of growth. Abnormally wet summers appear to favour high alkaloidal content. It appears possible that *Solanum dulcamara* may be subject to similar variations and that this abnormally wet summer may have favoured high toxicity of the berries. Recorded cases suggest that some individuals may be abnormally sensitive to solanine.

According to Reil (1857) solanine destroys life by producing paralysis of the muscles of the chest. It is a slow-acting poison, and so far as we know has not yet been isolated from the vomit or stomach washings of suspected cases. It differs from atropine (deadly nightshade) and hyoscyamus (henbane) in not producing stupor or delirium, dilatation of the pupils, sphincter paralysis, or pyrexia.

Plants of the genus *Solanum* can be identified only by a botanical examination of the leaves and berries. The following brief accounts are extracted from Bentham and Hooker (1945).

"(1) *Solanum dulcamara*. Synonyms: Bittersweet, woody nightshade, felonwort, violet bloom, scarlet berry. Found commonly in hedges and thickets in moist shady situations all over Europe except the extreme north. Common in England and Ireland. Rare in Scotland. Stem shrubby at base, with climbing or straggling branches, often many feet in length. Leaves stalked, ovate or ovate-lanceolate, two or three inches long, usually broadly cordate at the base and entire, but sometimes with an additional lobe or segment on each side. Flowers rather small, purple or blue with yellow anthers, in loose cymes, on lateral peduncles shorter than the leaves. Flowers in summer. Berries small, globular or ovoid and red when mature."

"(2) *Solanum nigrum*. Synonym: black nightshade. One of the most widely spread weeds. Common in England but local in Scotland and Ireland. An erect annual or biennial with very spreading branches, about a foot high. In Britain usually glabrous. Leaves stalked, ovate with coarse angular teeth. Flowers small and white in little cymes almost contracted into umbels on short, lateral peduncles. Berries small, globular, black."

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Bentham, G., and Hooker, J. D. (1945). *Handbook of British Flora*. Ashford
Reil (1857). *J. Toxicol.*, **2**, 245.
Taylor, A. S. (1875). *On Poisons in Relation to Medical Jurisprudence*. London.

Five Cases of Belladonna Poisoning

On Sept. 2, 1948, at 10.30 a.m., three children, Rosemary and Elizabeth, aged 7, and John, aged 8, were admitted to St. Mary's Hospital, Portsmouth, with the statement that during the night they had become delirious, lost the use of their legs, and could not see. All three were extremely restless on admission, twisting about, plucking at the bedclothes, and constantly grimacing. John and Rosemary were extremely talkative and obviously hallucinated; their speech was a little slurred. Elizabeth appeared to have some photophobia and lay with her head buried in the pillow, fiercely resisting any interference. All three children had hot, dry skins and a marked malar flush. The lips were dry and fissured, the pupils widely dilated and inactive to light. They had rapid pulses, 120–130, but normal temperatures and respiratory rates. The highest B.P. recorded was John's, 138/80 mm. Hg. Lying in bed there was no obvious muscular incoordination, though they continuously executed purposeless movements. All deep reflexes were brisk. The following facts were elicited from the mother.

The patients and another brother had gone out to play in the park the previous afternoon. They returned home about 5 p.m. stating

they were very tired and did not want tea; all complained of great thirst but otherwise appeared to be normal. At 7 p.m. the children went to bed and slept. At 9 p.m. three were awake and extremely restless. Their speech was rambling, they complained of being unable to see, and John, who climbed out of bed, "kept falling about the room." The mother thought all of them had high temperatures.

The fourth child in the family remained unaffected, and during the morning directed us to a plot of waste ground where there were two large blackberry bushes covered with ripe berries. Entwined among the stems were several plants of deadly nightshade (*Atropa belladonna*) also bearing large black berries. The child stated that he had eaten one berry, but five more children "had eaten a lot." Three of the five were the patients, and the fate of the other two was at this time unknown. Later during the morning the hospital was asked to admit a child, Keith, aged 9.

On arrival he was found to have a hot, dry skin, rapid pulse, and moderately dilated pupils inactive to light. He was extremely drowsy and resentful of any examination. The story was that this child had been blackberrying with the others. He had a large tea at 6 p.m. and went to bed at 9 p.m., apparently a normal child. At 2.30 in the morning he was found fighting with his elder brother. He talked incoherently, did not appear to know his parents, and kept picking imaginary objects off the bedclothes. At 4 a.m. he was given morphine by a local doctor, and remained drowsy up to his admission at 1.30 p.m.

Just after his arrival a fifth child, Derek, aged 6, was admitted with identical symptoms to the first three. He had returned from the blackberrying party about 7.30 p.m., had his supper, and went to bed. He was awake and vomited twice during the night. At 6.30 a.m. both parents went out, leaving the child in charge of an elder sister. The sister sought the help of neighbours about 12.30 p.m. because the boy was talking strangely. The onset of symptoms in this case must have been delayed for twelve to eighteen hours.

TREATMENT

On admission gastric lavage was carried out on all five children, first with plain water then with potassium permanganate solution, 10 gr. (0.65 g.) to the pint (568 ml.). This procedure induced vomiting, and over 30 berries were recovered from John's stomach and nearly as many from his two sisters. The berries, mixed with gastric contents, closely resembled raisins, but the seeds were smaller and darker than raisin "stones." No berries were recovered from Keith and Derek.

Rectal wash-outs with normal saline were also given, but no seeds or berries could be detected in the washings. Four hours later the gastric lavage was repeated, and several more berries were obtained from John and one of his sisters. At the end of the lavage a solution containing magnesium sulphate 90 gr. (6 g.) was left in the stomach.

By late evening there was no appreciable change in the children's condition; all were still extremely restless and hallucinated; pulse rates remained high, and they were all incontinent. At no time was there any evidence of urinary retention. During the night they slept sporadically, and by 9.30 a.m. the next morning all, except John, were quieter and fairly co-operative, though suspicious and resentful of any examination. The children all complained of great thirst and two of severe frontal headaches; there was still a marked malar flush, but the pupils were smaller and showed a slight reaction to light. The saline aperient was repeated, and all had several bowel actions during the day; by evening large numbers of seeds and berry skins were still being passed by John and his two sisters. At a conservative estimate John must have eaten at least 40 berries, and his two sisters between 20 and 30. Why no berries or seeds should be recovered from the other children, whose symptoms were no less severe, is a mystery.

The important features in these five cases of poisoning appear to be: (1) The prolonged period between the ingestion of the berries and the appearance of symptoms. (2) The absence of any fever or respiratory depression and the prominence of the hallucination. (3) The significance of "raisins" in the vomit—so unlike fresh deadly nightshade berries—might not have been appreciated in a case where no history of eating berries was obtainable. (4) The necessity for administering an emetic: many of the berries would have blocked the largest size of stomach tube.

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Reviews

MODERN OPHTHALMOLOGY

Modern Trends in Ophthalmology. Edited by Arnold Sorsby. Volume 2. (Pp. 600; illustrated. £3 3s., plus 1s. 6d. postage.) London: Butterworth and Co. (Publishers). 1948.

Modern Trends does not aspire to be a textbook describing its subject adequately and fully, but, like a connoisseur, surveys the whole field, neglects what is fully established and has become ensconced in the standard textbooks, and discusses those aspects of the subject which are showing emergent tendencies, in which active research is progressing, and which are still matters of speculative interest. A book of this kind, if written by those who are contributing actively to new knowledge and edited adequately and with wisdom, is of great interest. The first volume in this series appeared in 1940. The second, which is now published and contains accounts of many subjects not included in the first, maintains the same standard of excellence as its predecessor.

There are forty-eight articles on all aspects of ophthalmology—physiology, optics, diagnostic procedure, pathology, treatment, and social aspects—written by authors in Britain, the Continent, and the Americas. They are all of high standard and it would be invidious to single out any for special mention, although some of them are somewhat short and superficial. A composite compilation of this type often suffers from great inequalities, but the thoroughness of the editorship is seen in the relative standard maintained in the presentation of the various sections: many of these must have been rewritten. The illustrations and the general production of the book are a credit to the publisher.

STEWART DUKE-ELDER.

THE DIFFICULT ADULT

The Doctor and the Difficult Adult. By William Moodie, M.D., F.R.C.P., D.P.M. (Pp. 296. 15s.) London: Cassell and Co. 1947.

Dr. Moodie, primarily a child psychiatrist, has always maintained that it is just as necessary, if not more so, to treat the parent as to treat the child. He has therefore provided a sequel to his book on the difficult child with one on the difficult adult and how the medical man may deal with such a problem. Throughout the book he is at pains to show how the difficult child becomes the father or mother of the difficult man or woman by handing on his peculiarities of idea, emotion, and behaviour, not by heredity but by example.

The book starts with a brief résumé of the progress of psychiatric understanding of mental illness during the present century, but the author deprecates the modern tendency to pamper the neurotic, whereby he may derive more advantage than ever from his illness and assume an importance in the family and the community which is not warranted. He warns against the possibility of the psychiatrist encroaching too far into the fields of education and criminology and making practical issues of half-digested theories. The descriptions of the psychoses and psychoneuroses are admirably terse, and the narratives of the illustrative cases are throughout so vivid and dramatically told that a living picture of the individual patient is presented to the reader. Dr. Moodie makes a useful distinction between the anxiety neurotic, who thinks but really does not feel, and the agitated depressive, who feels intensely, often attributing his distress to a situation which is really the outcome of the depression. He points out that obsessive people live close to the unconscious and are closely allied to the schizophrenic, so he doubts whether they should be classed with the psychoneurotic.

He briefly discusses epilepsy, emphasizing its close association with emotional disturbance and the harm that may be done both to the patient and his relatives by too ready diagnosis of a disease that they dread so much. In many cases simple psychotherapy may be very effective and a hopeless prognosis very

detrimental. In discussing mental and emotional defect he makes it clear that intelligence tests are all too easy to perform but all too difficult to interpret. Intelligence profiles are much more useful than the plain I.Q. He gives a sound account of the approach to and general and special psychological treatment of patients and points out that really deep analysis is only seldom necessary. Full physical examination must never be neglected, and physical treatments may be useful in "saving the face" of the hysteric, provided that the doctor, and probably the patient too, clearly realize what is being done. Dr. Moodie is sceptical but not condemnatory of the modern physical treatments of the psychoses and is content to await further experience before passing a final judgment. The last chapter is on the milieu necessary to allow the mentally healthy child to grow into a mentally healthy adult, and the author refers particularly to child care in an affectionate and balanced home which is not disturbed by parent, teacher, or doctor.

This is just the sort of sound, well-balanced, informative book which anyone who knows Dr. Moodie would expect from his pen, and all who read it—and there should be many—will not be disappointed.

R. G. GORDON.

GYNAECOLOGICAL ANATOMY

Gynaecological and Obstetrical Anatomy. By C. F. V. Smout, M.D., M.R.C.S. With Chapters on the Histology of the Female Reproductive Tract and its Endocrine Control, by F. Jacoby, M.D., Ph.D. Second edition. (Pp. 248; 185 figures, many coloured. £2). London: Edward Arnold.

The first edition of this book was deservedly popular, but the new edition, compiled with the help of Dr. F. Jacoby, who has written four chapters on the histology and physiology of the ovary and uterus, is a great improvement. The photomicrographs are of fairly good quality. The other illustrations are plentiful, though not quite up to the standard of the best modern publications. The book should be widely read by candidates presenting themselves for the higher examinations in gynaecology and obstetrics, and there is clearly a big demand for a book of this kind.

Certain general criticisms can be offered. A fair amount of the subject matter is discussed in general textbooks and some of it should be omitted. On the whole the standard of the work is not sufficiently advanced for the senior students of to-day. Dr. Smout describes the normal bony pelvis and the different types of contracted pelvis in some detail, and it is interesting to read the opinion of the pure anatomist on the different types of pelvic deformity which have been identified by *x*-ray examination. The account of the anatomy of the pelvic floor is not, perhaps, sufficiently detailed. The original work of Tandler and Halban has withstood the test of time and should be mentioned, and more emphasis might be placed on the publications of Curtis and his co-workers. Further, the pelvic fascia is not divided into the pelvic fascia proper and the endopelvic fascia. Amreich's work is not mentioned.

The chapter on the histology of the ovary is good, but Dr. Jacoby should have emphasized more the work of Brewer and of Rock and Hertig, although all these authors are mentioned. The description of the pituitary hormones is excellent, and the author has shown a fine selectivity in delving through the literature. There is the usual difficulty in locating the limit of the lower uterine segment in the non-pregnant uterus, but he might have mentioned Aschoff's anatomical internal os and his histological internal os. Operating gynaecologists would possibly welcome an accurate description of the small arteries and venous plexuses found in the vicinity of the cervix and upper part of the vagina, and perhaps Dr. Smout might consider including one in the next edition. The aetiology of prolapse is well described, although there may be differences of opinion about the direct supports of the uterus; for example, the practical-minded gynaecologist might object to the statement that the vagina, the broad ligaments, and the round ligaments should be regarded as direct supports of the uterus. Markee's work is recognized, and we notice with interest that the authors pay sufficient attention to Rakoff's work on the biology and histology of the vagina.

WILFRED SHAW.

BOOKS RECEIVED

[*Review is not precluded by notice here of books recently received*]

Speech and Voice Correction. Edited by E. Froeschels, M.D. (Pp. 321. No price.) New York: Philosophical Library. 1948

A review of recent knowledge by various authors

The Problem Facing British Universities. By the Education Subcommittee of the Nuffield College. (Pp. 131 5s.) London: Geoffrey Cumberlege. 1948.

A study of the demands made on the universities

A New Theory of Human Evolution. By Sir Arthur Keith. (Pp. 451. 21s.) London: Watts. 1948.

A full exposition of the author's "group" theory of evolution

Experimentelle Triebdiagnostik. By L. Szondi. (Pp. 308. 68 Swiss francs.) Berne: Huber. 1948.

A classification and system of testing mental impulses.

Traité de Médecine. By A. Lemierre, *et al.* Vols. VIII and XI. (Pp. 545 and 1,166. 1,400 and 2,500 francs.) Paris: Masson. 1948.

Parts of a textbook of medicine appearing in 17 volumes. Vol. VIII, liver and pancreas; vol. XI, disorders of blood vessels.

Hormones and Behaviour. By F. A. Beach. (Pp. 368 $6 50.) London: Hamish Hamilton. 1948.

An account of the influence of hormones on human and animal behaviour.

Wonderful Mrs. Marriott. By J. Bell (Pp 294 9s. 6d.) London: Longmans. 1948.

A novel.

Management in Obstetrics. By A. M. Claye, M.D., F.R.C.S., F.R.C.O.G. (Pp. 186. 12s 6d.) London: Geoffrey Cumberlege. 1948.

A practical manual of management.

Taking the Cure. By R. G. Lovell, M.D. (Pp 93 10s.) London: Macmillan. 1948.

A book written to help the patient with tuberculosis

Clinical Toxicology. By C. H. Thienes, M.D., Ph.D., and T. J. Haley, Ph.D. 2nd ed. (Pp. 373. 22s. 6d.) London: Kimpton. 1948.

Intended as a guide for the general practitioner

Transactions of the Association of Life Insurance Medical Directors of America. Edited by J. R. Gudger, M.D. Vol. XXXI. (Pp. 220. No price.) New York: Recording and Statistical Corporation. 1948.

Includes articles on various aspects of medicine in insurance practice.

Diagnostic Procedures for Virus and Rickettsial Diseases. By various authors. (Pp. 347. $4.00.) New York: American Public Health Association. 1948.

An account of laboratory methods

About Cosmic Rays. By J. G. Wilson, M.A., Ph.D., F.Inst.P. (Pp. 144. 8s. 6d.) London: Sigma. 1948.

The detection and nature of cosmic rays described for the layman.

A Study of Hospital Administration. By F. Hart and A. J. Waldegrave. (Pp. 188. 15s.) London: Stevens. 1948.

A study of the administration of British hospitals immediately before the start of the National Health Service.

Almanaque de la Salud. (Pp. 204. No price.) Republica Argentina: Secretaria de Salud Publica de la Nacion. 1948.

A popular exposition of hygiene and preventive medicine.

Treatment by Manipulation. By A. G. Timbrell Fisher, M.C., M.B., Ch.B., F.R.C.S. 5th ed. (Pp. 275 25s.) London: H. K. Lewis. 1948.

Much of the book has been rewritten to include new material.

Minor Surgery. By R. J. McNeill Love, M.S., F.R.C.S. 3rd ed. (Pp. 430. 22s. 6d.) London: H. K. Lewis. 1948.

A guide to hospital residents and general practitioners.

BRITISH MEDICAL JOURNAL

LONDON

SATURDAY SEPTEMBER 11 1948

HUMAN FACTORS IN INDUSTRY

It is now coming to be understood that efficient production depends on industrial morale no less than on tools and equipment. Morale in industry depends in turn on mutual trust between manager and worker and on a sense of common responsibility and participation as much as on financial incentives. The re-equipment of industry necessary for increased output may take many years; but effects of great ultimate value, as well as more immediate results, may be obtained if a better use of human effort can be secured through an improvement in human relations in industry. In December, 1947, the Lord President of the Council set up a Panel on Human Factors, under the chairmanship of Sir George Schuster, as a permanent part of the Government's Committee on Industrial Productivity. This Committee advises the Government on the application of scientific knowledge in the present economic crisis and on the promotion of short-term research aimed at increasing output. The Panel's terms of reference[1] are "to advise the Committee regarding the directions in which productivity could be increased by the application of research into the human factors in industry and to make recommendations for further research in this field where called for." The British Medical Association appropriately invited Sir George Schuster to open a discussion on human relations in industry in the Section of Occupational Health at the Annual Meeting which was held in Cambridge last July, and his paper appears in the opening pages of this issue. In it he cogently presents one argument of importance to the medical profession. Industrial medical officers in different occupational groups can and should, through the intimate and individual nature of their vocation, have an important effect for good in the field of human relations. Medicine has already shown that it can contribute to the better deployment of human skill; there should therefore be an immediate and comprehensive expansion of occupational health supervision as part of the national plan for increasing productivity.

Sir George Schuster suggests that medicine can assist industrial productivity in three ways. The medical officer can attempt to fit the man to the job and the job to the man; he has the opportunities for sympathetic contacts with individuals; and he is in a position to plan and direct a positive health policy. But to fit the man to the job or the job to the man the profession must become more knowledgeable about work and working conditions than it is at present. The doctor must be prepared to equip himself with a wide and intimate personal experience of industrial life. One immediate opportunity to do this comes through the study of disabled workers and the problems of their retraining and resettlement. Success in placing disabled men and women in suitable jobs through mutual co-operation means that relationships of the right sort are established. Industry, on the other hand, must pay more attention to the problem of fitting the job to the worker and also to its moral obligations towards him. Sir George Schuster and his Panel, in addition to planning new investigations, will no doubt consider how the results of past research can now be implemented in practice by managers. Some doctors may possess a deeper human understanding of individuals than others, but all need experience and training in how to link human understanding with the day-to-day realities of occupation and how to translate good will into action. The individual man at work offers a great scope for study with the purpose of providing detailed information about the meaning of individual differences and motives, and the basic importance of participation and satisfaction. Arising from this will come the need for a closer investigation of working groups, and for more knowledge of the intricacies of collective attitudes and of sources of discontent and unrest.

The necessity for making future managers aware of these issues is shown in a recent report of a committee set up by the Minister of Education.[2] Over 400,000 persons are "engaged in managerial functions" at present, and 12,000 recruits are required annually. For men already in jobs training is to be on a part-time basis, over one or two years. The proposed syllabus is ambitious, particularly where it covers the fields of occupational health and psychology, but evidently the scheme is now accepted by the Government. Thus the need to inculcate into industry the importance of the human factor and its relation to a positive health policy is obviously accepted in the highest quarters, and a great opportunity is therefore presented. It is imperative that industrial doctors, as well as managers, should receive further training in this same field, not necessarily in short, condensed courses, as has been the tendency, but spread over two to three years. Some scheme might be evolved for interchange of views and for pooling of experiences, perhaps by combined "schools" for managers and doctors. So far the medical faculties of our universities have shown little evidence of understanding how medicine might thus contribute to the national well-being. If the university departments of occupational health now being developed in various industrial areas are to be nationally effective they must give close attention to the need for postgraduate education in individual psychology and the practical application of studies in human relations in industry. If Sir George Schuster and his Panel agree with this proposal, a stimulating impetus, backed perhaps by the Treasury, might well be given to those responsible for postgraduate medical training.

Recently an encouraging account was published in *The Times* of the initial work of the Panel. It has set up a research advisory group with representatives of the Medical Research Council, the British Institute of Management, the

[1] *The Times*, Aug. 10, 1948.
[2] *Education for Management*, 1947. H.M.S.O., London.
[3] *British Medical Journal*, Aug. 28, p. 436.

Tavistock Institute of Human Relations, and the National Institute of Industrial Psychology. A programme of short-term research drawn up by this advisory group is now to be undertaken. The Medical Research Council has accepted responsibility for the administration of this work—with the exception of that undertaken by the British Institute of Management, which has its own sources of support—including administration of the necessary funds which will be provided specially by the Treasury for these investigations. The programme includes studies of productivity in certain Royal Ordnance factories, the design and measurement of human performance, the effects of ageing on industrial productivity, methods of joint consultation, intra-management relations, the status, selection, and training of foremen, and the effect on production of the size of the unit. Research will be carried out under the direct supervision of experienced workers from such places as the Cambridge Applied Psychology Unit of the M.R.C., the Nuffield Research Unit at Cambridge, and the Tavistock Institute of Human Relations. It has been, and still is, difficult to find the right field workers. There is a general lack of persons suitably versed in the social sciences, and few facilities appear to exist at present for training likely candidates.

A similar challenge to the medical profession has been made by another layman, Professor William Line, a psychologist from Toronto. Speaking recently at the International Congress on Mental Hygiene[3] in London on ways and means of promoting "mental health" in industry—another name for the human factor—he insisted that doctors must take the leadership in research. He saw the potential advantage of their neutrality in management–worker relationships, and argued that high ethical standards have to be maintained, that training for doctors entering industry is vital, and that research into all matters of occupational health may have repercussions, possibly where least expected, of considerable importance in the field of human relations. In this last respect he wisely suggested that investigations into the health of the juvenile at his place of work should be undertaken immediately. He would no doubt agree that no close plan of always having a doctor as the leader could be effective; leadership in this connexion depends on opportunity, the nature of the problem, and individual qualities. In one place the chemist may be the pivot, in another the sociologist. Professor Line is on more controversial ground, however, when he demands for the research worker an unqualified right to scrutinize the inside of industry. Such a demand, at least in so far as this country is concerned, must be qualified by appreciation of practical realities and difficulties. There are difficult problems here, and research, which is bound to be governed by the tempers and emotions of individual human beings, will be successful only when management at all levels and employees in all groups feel that they are themselves participating in the search for knowledge. The human factor in industry cannot be considered in isolation, nor can it be investigated on the laboratory floor. So it is more than ever important, if Sir George Schuster's research schemes are to materialize happily, that those taking part have a full appreciation of these fundamental issues.

CONTROL OF DENTAL CARIES

A conference held last year at the University of Michigan was attended by dentists and others specially interested in the control of dental caries. In addition to hearing and discussing papers dealing with various aspects of the caries problem the delegates set up six evaluating committees to examine the literature and present reports embodying what seemed to them to be the most generally accepted present-day views. Had such a conference been held in this country a prominent place on the agenda would doubtless have been assigned to a discussion of the effect on the incidence of caries of dietary changes during recent years. It is perhaps not surprising that one finds no reference to this question in the report[1] of the American conference proceedings, but the paper by Lady Mellanby and Dr. Helen Mellanby which was published in the *Journal* two weeks ago (p. 409) provides much valuable information on the subject. Previous reports[2] recorded the incidence of caries in the deciduous teeth of 5-year-old London children in 1929, 1943, and 1945, and this latest paper in the series brings the story up to 1947. Between 1943 and 1947 the proportion of children completely free from caries increased from 14.9 to 28.1%, and the percentage of deciduous teeth which were carious decreased from 30.1 to 20.3. The improvement in the period 1945–7 is shown to have been greater than in the period 1943–5, and the authors consider that this is due to the fact that "throughout the whole antenatal and post-natal life of the latest group of children examined, who were born between November, 1941, and October, 1942, the diet available has been of consistently better calcifying qualities than that of the subjects of the earlier surveys. The pre-eruptive diet has produced better-calcified teeth than were formerly observed, and the post-eruptive diet has tended still further to increase the already higher resistance of these teeth to caries."

While there was some support at the Michigan conference for the view that teeth are more susceptible to caries when formed during a period of deficient vitamin-D intake, the members of the evaluating committee to which this subject was assigned felt unable to consider it as established that the vitamin-D content of the post-eruptive diet has any influence on the prevention or retardation of dental caries. Even during the period 1945–7 the majority of the children examined by Mellanby and Mellanby were by no means free from caries, and they suggest, as a result of a small-scale inquiry which they carried out, that many mothers did not obtain all the special foods which they might have had. This could be confirmed by an inquiry on a larger scale, but the finding would be of little value unless an investigation were also made with the object of discovering whether or not the incidence of caries tends to be higher in those children whose mothers do not fully utilize the available supplements than in those whose

[1] *J. dent. Res.*, June, 1948.
[2] Mellanby, M., and Coumoulos, H., *British Medical Journal*, 1944, **1**, 837; and 1946, **2**, 565.
[3] Knowles, E. M., *Mon. Bull. Min. Hlth*, 1946, **5**, 162.
[4] Bibby, B. G., *Tufts Dental Outlook*, 1942, May, 6.
[5] Weaver, R., *Brit. dent. J.*, 1944, **76**, 29.
[6] Weaver, R., ibid., 1944, **77**, 185.

mothers do avail themselves of all the supplements to which they are entitled. It has been generally believed that the diet available for the population of the Channel Islands during the enemy occupation was much inferior to that in Great Britain, and yet Knowles[3] has recorded that in 1945 as many as 51% of the children aged 3–7 years remaining in the Islands had complete dentitions free from caries, while the figure for children of the same age group evacuated to this country was only 11%.

Dental hygienists have been widely employed in the U.S.A. for a good many years, and there is therefore special interest in the statement by one of the Michigan evaluating committees that there is no statistical evidence that prophylactic cleaning three or even more times a year will reduce the caries-attack rate. Some years ago Bibby[4] expressed the view that it was futile to try to control dental caries by prophylactic treatments of the conventional sort, and he suggested that advocacy by the dental profession of such treatments as a method of caries control was to be deprecated as something which would redound to the discredit of dentistry. Suggestions for legalizing the employment in this country of hygienists on the same lines as in America have alarmed some members of the dental profession, who see in this proposal a "weakening" of the Dentists Act, 1921, but such fears should not prevent amendment of the Act if the work of hygienists were of proved value. There are, however, other members of the profession who have always found it difficult to see how prophylactic cleaning, however thoroughly carried out, at intervals of some months could possibly influence the caries-attack rate. It should be noted that the Michigan statement refers only to reduction of caries incidence; it leaves it still open to the advocates of the employment of hygienists to claim that periodical prophylactic cleaning produces other results of value.

The subject which seems to have attracted more attention at Michigan than any other was the use of fluorides for the control of caries. The caries-inhibiting property of drinking water which naturally contains 1 part per million or thereabouts of fluorine is now established beyond dispute. It would be surprising if artificial fluorination of water to that extent failed to produce the same effect on caries incidence, but proof must await the outcome of the fluorination experiments which are now in progress in certain localities in the U.S.A. and Canada. Meantime enthusiasm in those countries for the topical application of fluoride solutions to the teeth seems to be increasing. There have been numerous reports in which it is claimed that three or four applications of sodium fluoride solution, usually in 2% strength, have reduced the incidence of caries by about 40%. There appears to be a reluctance on the part of the enthusiasts to consider whether their topical applications really prevent the development of caries or merely postpone its onset. Weaver[5] recorded the incidence of caries in the permanent teeth of 12-year-old children in South Shields as being only 56% of the corresponding figure for North Shields children, and he was eventually satisfied that the lower incidence in South Shields was due to fluoride in the drinking water. Further investigations,[6] however, led him to conclude that this apparently remarkable reduction was not evidence of real prevention of caries but merely of postponement, and only for the relatively brief period of three to five years. It is possible that others who believe they can "prevent" caries might have to modify their views if they were to subject their findings to the same kind of examination as was applied to the South Shields figures. That examination showed that the incidence of caries in 15-year-old pupils in South Shields was approximately the same as the incidence in 12-year-old pupils in North Shields. Expressed in that form the findings may justify a moderate degree of satisfaction, but certainly not enthusiasm.

ARTIFICIAL INSEMINATION

The commission on artificial human insemination appointed by the Archbishop of Canterbury has just issued its report.[1] A document sponsored by such authorities as Dr. J. W. C. Wand, the Bishop of London, Professor E. O. James, and Professor R. C. Mortimer for the Church, with Dr. E. A. Bennet and Miss Louisa Martindale for medicine and Mr. Justice Vaisey and Mr. H. U. Willink, K.C., for the law, is certain to command attention, and this is in fact a highly informative study of a very difficult subject.

All the members were agreed that when the procedure can properly be described as "assisted insemination"—that is, as a sequel to normal or attempted normal intercourse between husband and wife—it may be justified. With Professor Mortimer dissenting, the commission further found that when "assisted insemination" is inapplicable or ineffective other methods of using the husband's semen may be employed, even if there is no practicable alternative to masturbation. All the members except the Dean of St. Paul's, Dr. W. R. Matthews, were agreed that artificial insemination with donated semen (A.I.D.) brings about a breach of the marriage: it violates the exclusive union set up between husband and wife, defrauds the child begotten, and deceives both his putative kinsmen and society at large. For donor and recipient the sexual act loses its personal character and becomes a mere transaction. For the child there must always be the risk of disclosure, deliberate or unintended, of the circumstances of his conception. The commission, again excepting Dr. Matthews, therefore judged A.I.D. to be wrong in principle and contrary to Christian standards. Moreover, following the advice of the legal members, who contributed a special section to the report and, incidentally, on the authority of Mr. Justice Vaisey and the Rt. Hon. H. U. Willink, condemned the memorandum issued by the Medical Defence Union as "superficial and indeed grossly misleading," criticism to which Dr. Robert Forbes replies elsewhere in this issue (p. 530), a majority of the commission added that the evils involved in A.I.D. were so grave that early consideration should be given to the framing of legislation to make the practice a criminal offence.

This extreme condemnation reads somewhat incongruously in contrast with the impartiality, almost approaching sympathy, with which A.I.D. is handled in the body of the report. Such evidence as was available from practitioners who had used the technique was considerably in favour of A.I.D. in suitable cases, and the opposition, apart from that of the legal members, was almost entirely founded on conjecture.

[1] *Artificial Human Insemination*, 1948. London: S.P.C.K. Pp. 70. 2s. 6d.

From this point of view the note contributed by Dr. Matthews, the dissentient member, is especially interesting. While deferring to the legal opinion, he suggests that if A.I.D. is now contrary to law any further legislation may be unnecessary, and that a law imposing penalties would be difficult to enforce without the cordial co-operation of the whole medical profession, which might not be obtainable. He considers the commission to have been too eager to reach final and absolute judgments on a matter which is as yet imperfectly understood. He confesses repugnance to the whole idea of artificial insemination as tending to reduce life to mechanism and to degrade our conception of personality. Some of the conjectural ill-effects of A.I.D. seem to him, however, unlikely to occur, and he sees no reason to suppose that the psychological difficulties arising from it would be different from or more acute than those observed in adopted children. The real question in his view is whether A.I.D. can ever be morally justified; if it is to be condemned absolutely, it can on no conditions ever be right. He is not convinced by the theological argument, preferring to deduce moral laws from the Christian ethic of love rather than from a changeable theology or from a supposed law of nature. He also deprecates the adoption by Christian teachers of the "crassly materialistic" hypothesis on which the lawyers call A.I.D. adulterous when carried out at the request of the husband and with due precautions against injustice to others. The spiritual elements which constitute the sin of adultery are, he judges, absent. Without being in any way an advocate of A.I.D., he has in fact stated the case for it about as strongly as it could be stated fairly in the present condition of our knowledge. Whichever of these two views the reader prefers, and whatever criticisms may be made of the conclusions of the majority of the commission, this report is bound to stand for a long time to come as an outstandingly able summary of this complicated question.

POST-GASTRECTOMY SYNDROME

In a proportion of cases a syndrome of varying degrees of severity may follow partial gastrectomy; post-prandial symptoms of dizziness, palpitation, sweating, epigastric discomfort, and a feeling of extreme weakness progressing on occasions to complete loss of consciousness are the usual symptoms. They may appear thirty to sixty minutes after meals or may not appear for two to three hours. They have generally been attributed to hypoglycaemia following the rapid rise and fall in the blood sugar after the relatively undelayed passage of a carbohydrate meal into the small intestine. Barnes[1] reported three patients who, after gastrectomy, developed crippling symptoms of hypoglycaemia coming on two to three hours after meals. Gilbert and Dunlop[2] supported this theory, but in both the cases they record in detail the correlation of the symptoms with the fall in blood sugar was unconvincing, for the symptoms came on quite soon after meals. Adlersberg and Hammerschlag[3] suggest a way out of the difficulty by dividing the post-gastrectomy syndrome into two types. In the early type, which corresponds to the so-called "dumping" syndrome, the symptoms appear soon after a meal and are possibly due to mechanical factors, the small stomach emptying its contents rapidly into the small intestine. Small meals and lying down after them gave relief. The late type, coming on after several hours, was relieved by food and attributed to hypoglycaemia, which followed the initial hyperglycaemia resulting from the rapid passage of carbohydrate into the intestine.

Elsewhere in this issue (p. 514) Dr. W. T. Irvine reports the results of his investigation of 24 patients who developed early post-prandial symptoms following partial gastrectomy. The symptoms were particularly obvious after big meals, which suggested a mechanical factor—an idea supported by the patients, who found that they could reduce the symptoms by limiting the bulk of the main meal. To elucidate the relative parts played by mechanical effect and by hypoglycaemia the results were compared of giving 50 g. of glucose in water on one day and a bulk meal containing very little carbohydrate (6 g.) on the following day. Serial blood-sugar estimations were made and the presence of symptoms recorded. In 16 out of the 24 cases the symptoms were more pronounced after the bulk meal, in four the severity of the upset was equal, and in the remaining cases the glucose drink caused most discomfort. It seemed, therefore, that bulk rather than the carbohydrate content was to blame. Hypoglycaemia was certainly not responsible, as all the symptoms occurring after the glucose drink were associated with a normal or raised blood sugar. Irvine's observations therefore support Adlersberg and Hammerschlag's contention that mechanical factors are responsible for the early symptoms. All his patients, however, had been operated on recently, and none had developed the late post-prandial symptoms which come on two to three hours after a meal. It is possible that these may not appear until months or several years after the partial gastrectomy, as in the three cases described by Barnes. There seemed to be no doubt that his patients were suffering from hypoglycaemia. The fact that the early and late post-prandial symptoms are similar does not exclude the possibility of two different mechanisms being responsible. Irvine suggests that adrenaline over-secretion may be produced by distension of the gut, and there are certainly points of symptomatic similarity between hypoglycaemia and excess of adrenaline secretion. This conception is of particular interest in view of the similar syndrome which is known to follow vagotomy for duodenal ulcer, and careful observation of these cases is indicated. A further study of early and late post-prandial symptoms is needed in correlation with different types of gastrectomy.

[1] *Lancet*, 1947, **2**, 536.
[2] *Surgery*, 1947, **21**, 720.
[3] *British Medical Journal*, 1947, **1**, 330.

NINTH INTERNATIONAL CONGRESS ON INDUSTRIAL MEDICINE

The Ninth International Congress on Industrial Medicine is being held in London from Monday, Sept. 13, to Friday, Sept. 17. The Congress is held under the auspices of the Commission Internationale Permanente pour la Médicine du Travail, which was founded by Luigi Devoto in Milan in 1906 to study questions concerning industrial medicine and to establish permanent relations between those who work in this field in different parts of the world. The original aim of the Commission was to hold congresses at regular four-yearly intervals, but two world wars have interfered with this plan. The last Congress was held in Frankfurt in 1938.

The opening session of the Congress next week is to be held in the Central Hall, Westminster, S.W.1, at 11.30 a.m. on Monday, when the chair will be taken by Lord Moran, P.R.C.P., and the inaugural addresses will be given by the Rt. Hon. G. A. Isaacs, M.P., Minister of Labour and National Service, and Mr. T. E. A. Stowell. At the closing session, also in the Central Hall, at 2.30 p.m. on Friday, with Lord Webb-Johnson, P.R.C.S., in the chair,

addresses will be given by the Rt. Hon. G. R. Strauss, M.P., Minister of Supply, Sir Ewart Smith, Professor P. Mazel, and Professor L. Carozzi. The very full programme which begins on Monday afternoon is divided into a number of sessions concerned with the various aspects of industrial medicine, and for the first time in the history of the Congresses the subject of industrial nursing has been included. Delegates from over 23 countries are attending the Congress, and it is hoped that there will be at least 1,000 delegates present during the week.

Those diseases of the lungs caused by metals and organic material will be discussed, and special attention will be paid to the pneumoconioses. Recent advances in the study of the problem as it affects the coal-mining industry in Great Britain, particularly in South Wales, will be described by a team of workers whose contributions to the study of this condition are already well known. Such distinguished workers as Professor Phillip Drinker, of the United States, and Dr. A. J. Orenstein, of South Africa, will receive an especially warm welcome from the British Organizing Council. The study of disease prevention, which is the keynote of industrial medicine, will be given special consideration, and one session has been devoted to preventive methods in mining. Experts from a number of countries are to read papers on the organization of industrial medical services, on the training of industrial medical officers and industrial nurses, and on the medical content of the law as it applies to industrial medicine. The study of the industrial environment, chemical, physical, and psychological, will be amply covered, and five sessions will be devoted to the study of industrial toxicology and the effects of the newer metals. There will also be a discussion on the hazards of radiant energy and their prevention. A new feature in the programme is the inclusion of a session on architecture in its relation to the industrial environment, and two specialists in this field will be speaking on the subject as it affects both miners and industrial workers. Papers on the highly specialized subjects of industrial diseases of the skin and of the eyes will be presented by experts in this field. At the close of the Congress the Mackenzie Industrial Health Lecture on the surgeon in industry will be given by Mr. H. E. Griffiths in the Great Hall at B.M.A. House.

At no time in our industrial history have the health, happiness, and efficiency of the industrial worker been of greater significance than they are to-day. Sir George Schuster's views on human relations in industry are presented at length in the opening pages of this issue and are the subject of comment also in our first leading article. At the Congress the problems of human relations, of incentives, skill, job adjustment, and absenteeism will be reviewed by experts from the United States, Canada, Great Britain, France, and Belgium, and important papers will be read by Professor Elton Mayo and Professor Sir Frederick Bartlett.

"BRITISH JOURNAL OF INDUSTRIAL MEDICINE"

Next month the *British Journal of Industrial Medicine* will have completed five years of life, and it seems appropriate, when the Ninth International Congress of Industrial Medicine is about to meet in London, to review its achievements. The enthusiasm of a small group of members of the Association of Industrial Medical Officers led by Dr. Donald Stewart in Birmingham was responsible for the creation of the journal; and it was a considerable achievement to start a new journal in 1944—the fifth year of a world war. Sir Henry Bashford, then medical adviser to the Treasury, was the first editor, and it was under his guidance that the pattern of the journal was set. The first number contained articles on statistics, toxicology, environment, nutrition, and orthopaedic surgery. This in itself shows what a wide field had to be covered. The medical problems of such different industries as shipping, shipbuilding, chemicals, mining, catering, agriculture, and retail trading cannot be confined in a narrow specialty, and there is no branch of medicine which has not some representation in this journal.

Sir Henry Bashford resigned the editorial chair before the first number appeared in print and his place was taken by Dr. Donald Hunter, whose indefatigable energy has carried the journal over every sort of obstacle from paper control to printing strikes, so that it is now a flourishing concern with a large circulation.

The journal has often had to face the criticism that it devotes too much attention to toxicology, but there have never been any grounds for this opinion; in fact out of 117 articles only 25 have been concerned with industrial toxicology. The wide scope of the journal is also shown by the diverse interests of the editorial committee, which includes a statistician, an orthopaedic surgeon, a toxicologist, a chest physician, a ventilating engineer, a professor of industrial medicine, and others interested in the social aspects of the subject. There have been many articles on the prevention of accidents, a topic regarded as of great importance by the Ministry of Labour and frequently discussed in the annual reports of the Chief Inspector of Factories. There have, however, been very few from the surgeons on the treatment of these accidents, and it is to be hoped that much more attention will be given to this subject. The excellent Liverpool Docks Medical Service has shown that efficient treatment of minor injuries can save an enormous amount of human suffering and disability. Besides the original articles the journal publishes book reviews, summaries of British and foreign official publications, proceedings of the Association of Industrial Medical Officers, and, by collaboration with *Abstracts of World Medicine*, an abstract edition, which is of value in keeping the industrial medical officer informed of work in foreign countries. From time to time critical reviews have appeared. The first, by Dr. Thelwall Jones, of Liverpool, was on the subject of "Industrial Dermatitis." This was followed by the "Toxicology of the Newer Metals," an authoritative and complete account of a developing subject by Dr. Lawrence Fairhall, of the United States Public Health Service; "Health Hazards of the Pharmaceutical Industry," by Dr. R. M. Watrous, of Abbott Laboratories, Chicago; and the "Effects of Climatic Extremes," by Dr. Macdonald Critchley.

Clearly the *British Journal of Industrial Medicine* is already playing a useful part in disseminating knowledge and in promoting interest in this growing specialty. Another annotation in this issue gives some account of the programme for the Ninth International Congress on Industrial Medicine. It is hoped to publish in the near future a special issue of the *B.J.I.M.* with papers and reports from the more important sections of the Congress.

Dr. F. M. R. Walshe, F.R.C.P., F.R.S., will deliver the Harveian Oration before the Royal College of Physicians of London (Pall Mall East, S.W.) on Monday, Oct. 18, at 3 p.m. His subject is "The Structure of Medicine and its Place among the Sciences."

THE FACTORY NURSERIES

BY

W. E. CAVANAGH, B.Sc.(Econ.), D.P.A.

Since the end of the war a great many of the wartime nursery schemes operated by local authorities have dwindled or vanished altogether. This may be partly because the general public pressure in favour of nurseries has lifted and also because a more cold-blooded examination of the position has thrown doubt upon their value as a contribution to the solution of problems of labour shortage.

The main interest of the maternity and child welfare department of the authority is in the welfare of the child, not the economic productivity of the mother, and it is often the most necessitous rather than the most highly skilled mother whose child is admitted to the council nursery. From the point of view of labour supply there are too many loop-holes, and it is not always possible for the nursery to maintain an accurate check on the attendance of the mothers at work or to evaluate the comparative national importance of the proposed employments of those on the waiting list. In addition the expense of the nurseries is very great and now falls to a far larger extent upon local funds than during the period of the wartime special grant. The local authorities are therefore showing some resistance to Government efforts to persuade them that it is the duty of the local ratepayer to make a substantial contribution for a generalized, and doubtful, return.

While the number of nurseries has declined, it is worth noting that this has been accompanied by a considerable increase in the number of nursery classes provided by the education authorities in the schools as part of the education service, and a great expansion of the school meals service. The staff used in the nursery classes is in the ratio of one to every seven or eight children as against one to four in many of the day nurseries, but otherwise some of the same objections apply; far more serious is the difficulty that they do not accept children under 2, and that they are normally open only during the usual school hours and during term time. They cannot take the place of the day nursery.

These changes have taken place simply as part of our general peacetime plan for normal social services. They are not intended to relate to our present situation, which is such that we are fighting for our lives in the export markets of the world and our labour supply position is worse than at almost any time during the war. Except in areas with a high concentration of export industries the picture does not present itself to the public mind with the sharpness of its ominous reality, and it is doubtful whether public opinion on the restarting of large-scale nursery schemes by the local authorities would in most areas be more than lukewarm, if not actually hostile. Against this background of doubt and hesitation a new development is being tried out on an increasingly large scale—the factory nursery.

Here the employer is responsible for the whole expense beyond what can be charged to the mother, and the cost is still near the 35s. mark. Charges are low, and usually not on a sliding scale but on a flat rate varying from 1s. to 2s. per day in different factories for a five-day week. This means that a net cost of 25s. to 30s. per child is being borne by the firm. In spite of this great expense the North-West Region, which contains almost all the factory nurseries now opened, presented the following picture at the time of going to press:

Factory nurseries

Open	..	66,	providing	2,549 places
About to open	..	23,	,,	875 ,,
In project stage	..	15,	,,	570 ,,
		Total	..	3,994 ,,

Private firms do not lightly incur such costs as these. Their interest is in the freeing of mothers for factory work, and the schemes are well worth examination from the labour-supply point of view.

Administration of Nurseries

The key points are, of course, the staff used and the mothers released. Each factory need open its nursery only for the period covering its own full-time day and can therefore usually manage to run on the number of staff officially recommended by the Ministry of Health—i.e., one to every five children. Many factories have maintenance and service staffs and a doctor actually on the spot or near at hand, and these can often include the nursery in their normal day. Nurseries may draw their food from the factory canteen and neither buy nor cook their own. The nursery is appropriately sited in the sense that no extra travelling time is required, and some firms collect the mothers and babies in a special bus each morning. The mother can often see the nursery garden and playroom from the windows of the factory.

The employer has a direct interest in seeing that the nursery is used by the mothers most valuable to him and will even hold a place open, refusing the applications of the less skilled if he has hopes of securing a worker in a higher category. He has also the best means of knowing exactly what work the mother is doing and whether she is actually at work. He does not allow the mother who takes a day off for shopping or an afternoon at the pictures to use the nursery while she does so, nor can she usually send the child while she is sick, since it is not primarily a welfare service but a very costly method of getting labour.

Most of the factory nurseries take only one child from each family as a rule, but some categories of labour (e.g., drawframe tenters in the ring spinning industry) are so vital—since their absence can cause a bottle-neck affecting a wide range of subsequent processes and numbers of other workers—that an employer may be prepared to incur the expense of two or even three children rather than lose the mother. There are similar instances of nurseries taking a child of over nursery age during the school holidays, or the child of a male key worker whose wife is sick and could not attend to it.

The nurseries are being allowed to recruit helpers of all ages over 15, and it is an interesting fact that while almost all other occupations can offer vacancies but cannot fill them the factory nurseries have no difficulty in obtaining staff. Some employers are even able to vary their staff from week to week according to the numbers of children being accommodated.

Most of these helpers are between 17 and 40 years old and could theoretically be employed in factory work themselves. They are unskilled, however, and presumably unwilling, and their usefulness would be small as compared with that of the mothers they now release. The more highly skilled the work in the area the more worthwhile the nursery becomes. In some areas where nearly all the work is skilled or at least requires a degree of dexterity only acquired after long practice as much as two-thirds of the labour force is female and up to 80% of these are married. In the case of cotton a record of prolonged unemployment and bad conditions in the past has diverted the juvenile entry to other occupations. Until the new attractions of higher pay, shorter hours, more modern machinery, much better working conditions such as exist at many undertakings now, together with the new gain in national prestige, have had time to take effect, the outward flow will not be reversed. This may take a decade; and it is difficult to see what in the meantime is the acceptable alternative to nurseries. The size of the labour pool which they can hope to tap is indicated by the success of the housewives' evening shifts and the long waiting lists at all the nurseries.

There are areas where the labour-supply advantages of even the factory nurseries are not quite so clear—e.g., where the released mothers are doing work which is not so skilled that it could not be done by young unmarried women at present working in the nurseries. It must be realized, however, that the two groups—staff and mothers—have sorted themselves out into those who, on balance, prefer nursery to factory work and those who are willing to go into the factory. It is possible to criticize this solution from the point of view of the children, even against a background of bad and overcrowded housing conditions, low rations, and the difficulty of meeting the high cost of living beyond bare necessities out of one income. But those who do so must also face the realities of the present situation. They must be prepared to consider the alternative

of a return to wartime control of labour, of direction of women to work of the highest priority only, however "unsuitable," and of juveniles into the undermanned industries, whether in their own home towns or away, and the further alternative of much longer hours for men of all ages.

Registration with Local Authority

There has been strong criticism of the nurseries themselves. Reference has been made in Parliament to "cases of bad overcrowding . . . premises deficient in ventilation or sanitary accommodation," and staff "completely untrained and not suited to the work." The Ministry of Health, though able to give priority in certain areas for building materials, etc., has otherwise had no more than an advisory function and could neither inspect nor control such nurseries.

The Nurseries and Child-Minders Regulation Act, which received the Royal Assent a few weeks ago, now lays the responsibility squarely upon the shoulders of the local welfare authority and the local medical officer of health. Nurseries are in future to be registered with the local authority, whose authorized representative may enter the premises at all reasonable times, if necessary on a warrant from the justices. The local health authority may require the appointment to the staff of persons qualified as they may specify and in such numbers as they decide. They can also require the adequate maintenance and equipment of the nursery, medical supervision of the children, and an adequate and suitable diet.

As one M.P. remarked, voicing the general opinion, "the regulations are wholly desirable." Nothing is required to be done before the expiration of a "reasonable time" from the commencement of the Act, and as the greatest difficulty is likely to be that of obtaining trained staff the interpretation of a "reasonable time" must be liberal. Present economies of labour due to the supply of meals from the factory canteen may also disappear in some cases. But the advantages of the factory nurseries in regard to siting and maintenance are solid, and the vital fact that the employers, who bear the cost, also select the users should ensure that they continue to make a real contribution to the solution of our labour problem.

STREPTOMYCIN TREATMENT OF TUBERCULOSIS

MINISTRY OF HEALTH STATEMENT

The allocation and distribution of streptomycin will henceforth be on a regional basis. The beds will be so staffed and equipped as to ensure the necessary scientific control of the treatment. It is therefore hoped that, so far as possible, doctors having suitable patients will endeavour to admit them to these beds.

In view of the recent and proposed future extensions of the scope of streptomycin treatment of tuberculosis in this country it is desirable that all who are likely to use the drug should be aware of certain limitations and dangers associated with its use. Even for the three types of tuberculosis (acute miliary, meningeal, and ulcerative tracheo-bronchial and laryngeal) for which streptomycin constitutes the best treatment yet found and appears to produce a cure, this is only in a minority of the meningeal cases, and it certainly does not produce 100% cures in miliary cases. Clearly, streptomycin is not a panacea even in these forms of the disease. By far the most important toxic effects of streptomycin are vestibular changes, compensation for which is visual and cannot therefore be achieved in a poor light.

The production of streptomycin-resistant strains of *M. tuberculosis* is, however, the greatest potential danger, because it is two-edged. Thus a patient with very early pulmonary disease who might have responded to other recognized forms of treatment alone but who is given streptomycin "prematurely" may be found, in the event of relapse or extension of the disease, to be beyond the reach of streptomycin treatment. From the public health point of view there is clearly a risk of old chronic cases spreading infection with streptomycin-resistant strains—so that patients acquiring meningeal or miliary tuberculosis from them cannot hope, in their turn, to be benefited by streptomycin treatment.

HOSPITALS IN SPECIAL SCHEME

A. Tuberculous meningitis and acute miliary tuberculosis.
B. Tracheo-bronchial tuberculosis.

An asterisk indicates university hospital centres.

Newcastle Region

		Beds
A.	*Royal Victoria Infirmary, Newcastle	18
	City Hospital for Infectious Diseases, Walkergate, Newcastle	12
	Sunderland Royal Infirmary	?
	Fleming Memorial Children's Hospital, Newcastle	2
	Newcastle General Hospital	12
	Poole Sanatorium, Nunthorpe, Middlesbrough	6
	Phillipson Children's Sanatorium, Stannington	12
	Cumberland Infirmary and I.D. Hospital	6
B.	Poole Sanatorium, Nunthorpe, Middlesbrough	?
	City Hospital for Infectious Diseases, Newcastle	?
	Cumberland Infirmary	?

Regional Distribution Centres:—(*a*) Newcastle General Hospital: Mr. Wing, Chief Dispenser (Newcastle 35211). (*b*) Pathological Laboratory, Cumberland Infirmary, Carlisle: Dr. Faulds (Carlisle 590). (*c*) Newcastle Royal Victoria Infirmary: Dispenser (Newcastle 25131).

Leeds Region

A.	*General Infirmary, Leeds	2
	*St. James's Hospital, Leeds	6
	*Seacroft Hospital	5 cots
	*Pinderfields Hospital, Wakefield	10
	*Killingbeck Sanatorium	6
	Hull Sanatorium, Cottingham	6†
	York City Hospital	3
	Scotton Banks Sanatorium, Knaresborough	6†
	Middleton Sanatorium, Ilkley	6†
	Grassington Sanatorium	4† + 2 cots
	St. Luke's Hospital, Bradford	6
	Huddersfield Royal Infirmary	3
	Halifax General Infirmary	3

Regional Distribution Centre:—Leeds Blood Transfusion Laboratory, The Bridle Path, York Road, Seacroft, Leeds: Dr. T. S. Marshall (Leeds 45091-2-3).

Sheffield Region

A.	*Children's Hospital, Western Bank, Sheffield *Royal Infirmary, Sheffield *Royal Hospital, Sheffield City General Hospital, Sheffield *Lodge Moor Isolation Hospital *Winter Street Hospital	Sheffield Group 12
	Derby Isolation Hospital	1
	Nottingham General Hospital Nottingham City Hospital	6
	Leicester City General Hospital	3
	Lincoln County Hospital	4
B.	*Sheffield Group (as above)	12
	Ransom Sanatorium, near Mansfield	10
	Newstead Sanatorium, Mansfield	4
	Leicester City Isolation Hospital and Sanatorium	12
	Branston Hall Sanatorium, Lincoln	5
	Grimsby Corporation Hospital	5

Regional Distribution Centre:—City Hospital, Hucknall Road, Nottingham: Dr. W. Morton (Nottingham 66292).

East Anglian Region

A.	*Addenbrooke's Hospital, Cambridge	10
	Ipswich and East Suffolk General Hospital	4
	Norfolk and Norwich General Hospital	4
	Peterborough Memorial Hospital	4
B.	Papworth Sanatorium	6
	Kelling Sanatorium	6
	White Lodge Hospital, Newmarket	4

Regional Distribution Centre:—Addenbrooke's Hospital, Cambridge: Mr. Hopkins, Chief Pharmacist (Cambridge 4451).

North-West Metropolitan Region

A.	*Middlesex Hospital	8
	*St. Mary's Hospital	10
	*Hospital for Sick Children, Gt. Ormond Street	8
	*University College Hospital	8
	*Royal Free Hospital	10
	*Charing Cross Hospital	10

†Including tracheo-bronchial.
‡Tracheo-bronchial only.

North-West Metropolitan Region (continued)

	Beds
Archway Hospital	3†
Highgate Hospital	3†
Clare Hall Hospital	6†
Royal Northern Hospital	6†
King Edward VII Hospital, Windsor	6†
Central Middlesex Hospital, Park Royal	6†
Ashford County Hospital	6†
Paddington Hospital	6†
Hillingdon Hospital, Uxbridge	6
Lister Hospital, Hitchin	4
Redhill Hospital, Edgware	2 cots§
Colindale Hospital, Hendon	6‖
Northern Hospital, Winchmore Hill	6‖
Harefield Sanatorium	6
St. Charles Hospital, Kensington	6
West Middlesex Hospital, Isleworth	6

Regional Distribution Centre:—West Middlesex Hospital, Twickenham Road, Isleworth: Miss Bristowe (Hounslow 2311).

North-East Metropolitan Region

A. *St. Bartholomew's Hospital	8
*London Hospital	8
Black Notley Hospital	6
Broomfield Hospital	6
Oldchurch Hospital	6
Mile End Hospital	6
North Middlesex Hospital	6
Highwood Hospital	6
Herts County Hospital	3
The Harts Sanatorium, Woodford Green	3
Southend Municipal Hospital	3
Hackney Hospital	3

Regional Distribution Centre:—Mile End Hospital, Bancroft Road, E.1: Dr. Sears, Physician Superintendent (Advance 2873/7).

South-East Metropolitan Region

*Guy's Hospital (and at Evelina Hospital for Children)	12
*King's College Hospital	5
Grove Park Hospital	10†
Park Hospital	4
Kent and Canterbury Hospital	8†
Farnborough Hospital	8†
Eastbourne Hospital	2
Tunbridge Wells Hospital, Kent and Sussex Hospital, Pembury Hospital	6†
Brighton Sanatorium	6†
Joyce Green Hospital	6†

Regional Distribution Centre:—Grove Park Hospital, Lee, S.E.12: Dr. M. H. Logg (Lee Green 1547).

South-West Metropolitan Region

A. *St. Thomas's Hospital	8
*St. George's Hospital (Victoria Hospital for Children, Tite Street, and Atkinson Morley Hospital, Wimbledon)	10
*Westminster Hospital	4
Royal South Hants and Southampton Hospital	8
Royal Victoria and West Hants Hospital, Bournemouth	6
St. Peter's Hospital, Woking	6
B. Royal National Hospital for Diseases of the Chest, Ventnor, Isle of Wight	12
Milford Sanatorium, Godalming	12

Regional Distribution Centre:—South London Blood Supply Depot, Benhill Avenue, Sutton: Dr. E. G. Murphy (Vigiland 0068).

Oxford Region

A. *Oxford United Hospitals (Radcliffe Infirmary, Churchill Hospital)	7
Northampton Hospital Group	4
Reading Hospital Group	10
Aylesbury Hospital Group	2
B. *Oxford United Hospitals (Oster Pavilion)	8
Peppard Sanatorium	26
Creaton Sanatorium, Northants	15
Rushden Sanatorium, Kettering	8

Regional Distribution Centre:—Churchill Hospital, Oxford: Mr. Trillwood, Chief Pharmacist (Oxford 48651).

†Including tracheo-bronchial cases
§Meningitis only
‖Miliary and tracheo-bronchial cases

South-Western Region

	Beds
A. *Bristol General Hospital	12
Winsley Sanatorium, Bath	6
Ham Green Hospital and Sanatorium, Bristol	8
Hawkmoor Sanatorium, Bovey Tracey, Devon	6
B. Winsley Sanatorium, near Bath	6
Ham Green Hospital and Sanatorium, Bristol	12
Hawkmoor Sanatorium, Bovey Tracey, Devon	6

Regional Distribution Centre:—Ham Green Hospital and Sanatorium, Bristol: Dr. J. Macrae (Bristol 31165).

Wales Region

A. *Cardiff City Isolation Hospital	20
North Wales Sanatorium, Denbigh	10
Glan Ely Hospital, Cardiff	5
Hill House Isolation Hospital, Swansea	10
B. Sully Hospital, Glamorgan	6
North Wales Sanatorium, Denbigh	6

Regional Distribution Centre:—Cardiff City Isolation Hospital, Cardiff: Dr. Emrys Harries (Cardiff 960).

Birmingham Region

*Children's Hospital, Birmingham, *Queen Elizabeth Hospital, Birmingham, *General Hospital, *Women's Hospital	25
Selly Oak Hospital	12
Dudley Road Hospital	9
North Staffordshire Royal Infirmary	8
Little Bromwich Hospital	6
Yardley Green Road Sanatorium	6
Wolverhampton Royal Hospital	4
Coventry and Warwick Hospital	4
Royal Salop Infirmary	4
Whitley Isolation Hospital, Coventry	4
Hereford County Hospital	3
Worcester Royal Infirmary	2
Warneford Hospital, Leamington	2
Burton General Infirmary	1

Regional Distribution Centre:—Selly Oak Hospital, Birmingham: Mr. R. P. S. Kelman, Medical Superintendent (Selly Oak 1361).

Manchester Region

A. *Royal Infirmary, Manchester	12
Preston Royal Infirmary	6
Hope Hospital, Salford	6
Park Hospital, Davyhulme, Manchester	4
Royal Infirmary, Bolton	6
Boundary Park Hospital, Oldham	6
Booth Hall Hospital, Manchester	4
Baguley Sanatorium, Manchester (long-stay)	6
B. Baguley Sanatorium, Manchester	6
Elswick Sanatorium, Fylde	4

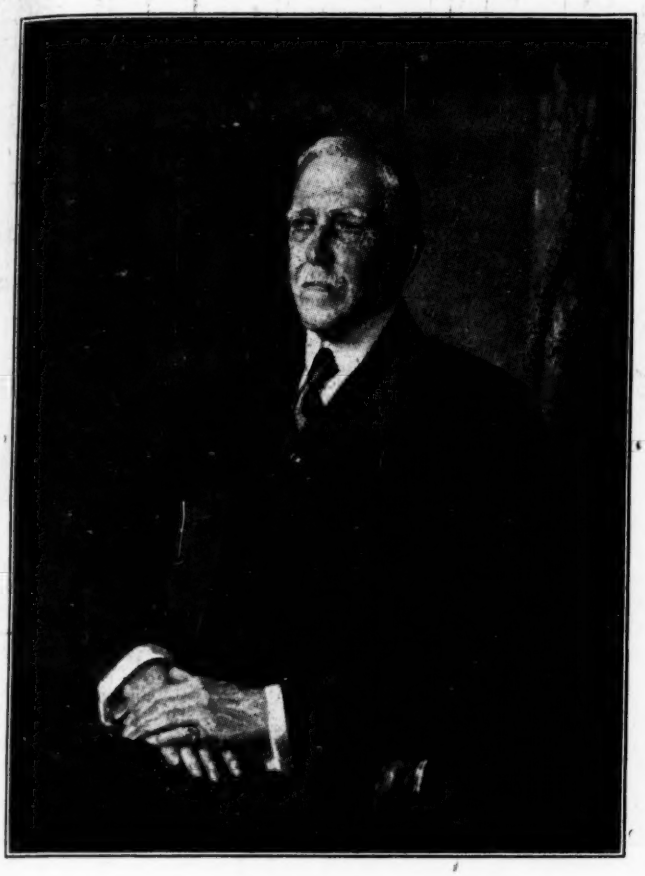
Regional Distribution Centre:—Manchester Royal Infirmary: Mr. J. B. Lloyd, Chief Pharmacist (Ardwick 3300).

Liverpool Region

A. *Alder Hey Children's Hospital, Liverpool	7
*Royal Southern Hospital, Liverpool	5
*Royal Liverpool Children's Hospital	4
Fazakerley Sanatorium	4
Fazakerley Infectious Diseases Hospital	3
Clatterbridge General Hospital, Bebington, Cheshire	4
Royal Infirmary, Liverpool	3
B. Fazakerley Sanatorium	20

Regional Distribution Centre:—Fazakerley Sanatorium, Liverpool 9: Dr. O. F. Thomas, Medical Superintendent (Aintree 2324).

The Medical Protection Society records in its recently issued Annual Report that 1,501 new members have been elected. The short accounts of legal proceedings taken against medical men during the year—an inevitable and indeed increasing burden on our profession—are as instructive as ever. The Report comments on the large number of cases being reported where a syringe needle has broken in the tissues of the patient. The Society has such needles examined by a metallurgist, and it appears that the fault lies almost invariably with the needle. Practitioners are reminded that iodine should not be brought into contact with these needles, and they should be sterilized in such a manner that the temper of the steel is not altered. The Annual General Meeting of the Society will be held on Sept. 29 after an Extraordinary General Meeting to be held on the same date.



SIR JOHN HERBERT PARSONS

A Presentation Portrait

The members of the Faculty of Ophthalmologists and of the Ophthalmological Society of the United Kingdom subscribed to present to Sir John Herbert Parsons on his eightieth birthday his portrait painted by Mr. John Gorlay. The presentation, the occasion for which was the subject of an annotation in our issue of Sept. 4 (p. 481), took place at the Royal College of Surgeons on Friday, Sept. 3, in the presence of a large gathering of ophthalmologists from all parts of the country; others at the ceremony included Lord Webb-Johnson and Sir Henry Dale.

Sir Stewart Duke-Elder, in making the presentation, after speaking in feeling terms of his great personal indebtedness to Sir John, said that the portrait was given to signalize what its subject had done for British ophthalmology, and in the second place to express the feelings which his colleagues and former students had for him. Some of the younger men in ophthalmology might not be aware of all they owed to Parsons. Alike in clinical work, fundamental research, and publication and teaching he was *facile princeps*. Every ophthalmologist treated his patients better because of what Parsons had taught and written. He would be remembered for his work as a pioneer in ophthalmological pathology. In the fundamental sciences which underlay vision—the biological, physiological, and pathological sciences—Parsons was still the greatest authority. In the organization and inspiration of research he stood almost alone. In all problems concerning sight, Government and industry had consistently asked and received his help. In international ophthalmology he had always been a leading figure and a constant and acceptable British ambassador.

Sir Stewart Duke-Elder went on to say, however, that in his opinion Parsons's greatest service to ophthalmology was something more subtle. Through him it had been possible to maintain continuity in the transition from the past to the future. When he was young ophthalmology was the scene of a great deal of individual research, but later, and particularly during the inter-war period, largely because of the advance of scientific research in general, it was necessary for individual to give place to organized effort, for which they were rather ill equipped and ill prepared. It was certainly due to Parsons that individual scientific research in ophthalmology showed signs of reviving. Parsons had been largely responsible for instituting the Faculty of Ophthalmologists. The speaker hoped that in the new College of Surgeons the Faculty and the Society would have a council room of their own, and that in that room, when Sir John had no further use for it, this portrait would hang in the place of honour as a reminder to them all of his great service. The portrait was not only a mark of admiration and gratitude but a real expression of affection. In his long life Sir John had received many marks of recognition in high places, and British ophthalmology had given him every honour it was in its power to bestow. The portrait was a symbolic expression of the affection of three generations of British ophthalmologists who felt themselves deeply in his debt.

Lady Duke-Elder having unveiled the portrait, Sir John Herbert Parsons covered his emotion by embarking on some philosophical observations on portraiture and personality, adding only that no achievement could be greater than for a man to have gathered around him a group of faithful and affectionate friends.

Reports of Societies

BRITISH NEUROLOGICAL SURGEONS

Meeting in Dublin

The Society of British Neurological Surgeons held its thirty-eighth meeting in Dublin on July 29 and 30, under the presidency of Sir Hugh Cairns. Meetings were held in Trinity College by the courtesy of the Provost, and the programme was arranged by the regius professor of surgery, Adams McConnell. There was a large attendance which included corresponding members from Canada, Sweden, Denmark, and Spain, as well as British visitors.

The main item was a symposium on the surgery of the acoustic neuromas opened by Dr. Gilbert Horrax, of the Lahey Clinic, Boston, Mass., and Professor Herbert Olivecrona, of Stockholm, whose paper had to be read for him as he was recovering from a recent attack of pneumonia. The discussion was continued by Mr. D. W. C. Northfield, Professor Jefferson, and Mr. Pennybacker. It is hoped that a full account of this important review, in all of several hundred cases, will eventually be published.

Other items of interest were contributions by Sir Hugh Cairns on the treatment of subdural empyema; by Professor McConnell on subdural collections of fluid after head injuries; by Dr. Allan Mooney on the cause of certain field defects by pressure on the optic nerves; by Professor Jefferson and Mr. Richard Johnson on intracerebral bleeding from aneurysms; by Mr. Dawson on the blood supply of the chiasma and optic atrophy from arteriosclerotic plaques in the walls of the carotid artery; by Mr. Atkinson on brain-stem infarction from operative injuries of branches of the superior cerebellar artery; and by Mr. Tutton on the superiority of facio-hypoglossal over spino-facial anastomoses for facial palsy. Mr. Dickson Wright showed a coloured film illustrating his special approach to the orbit for the removal of orbital tumours.

The Society's dinner was held in the Hall of the Royal College of Surgeons in Ireland, through the hospitality of Professor Meade.

The second meeting of the Scottish Society of the History of Medicine was held in the hall of the Royal College of Surgeons of Edinburgh on June 18, with Dr. DOUGLAS GUTHRIE, the president, in the chair. Dr. JOHN RITCHIE read a paper on "Quarantine for Plague in Scotland in the Sixteenth and Seventeenth Centuries." Dr. Ritchie described the methods of quarantine and disinfection of ships and their cargoes, and the measures taken to deal with the crews and passengers by isolating them on various islands in the Firth of Forth and elsewhere. In 1627, "Laurence Cockeburn, chirurgeon," personally examined the crews of suspected ships in the Forth on the instructions of the Edinburgh magistrates. Cockeburn was therefore probably the first port medical officer in Scotland. It is hoped that the third meeting of the Society will be held in Glasgow in October.

Correspondence

Prevention of Dust Diseases of the Lung

SIR,—Dr. A. Meiklejohn (Aug. 21, p. 399) asks us in relation to dust disease of the lungs, "What is the earliest harmful evidence in coal-miners at which the workman should be advised to give up his skilled occupation and seek alternative work, or, in the language of the compensation schemes, what constitutes the disease to a dangerous degree?" We would immediately agree with him in stating that this question demands a clear unequivocal answer. Before such an answer can be given, there are various points which require consideration. First, it has long been known that of men certified as suffering from pneumoconiosis at an early age a majority advance to massive consolidation some years after leaving the industry and become eventually totally disabled by their disease. It is evident that this state of affairs must not be allowed to continue and that, ideally, at no time should any man become completely unemployable by virtue of pneumoconiosis; but again it must be remembered that the vast majority of ex-miners are, once their skilled trade is closed to them, only able to obtain manual work usually of a comparatively heavy nature. This statement is borne out by the obvious preference shown to young women and non-miners by the managements of factories in this area, who employ by and large the minimum of ex-miners. One can see, therefore, that the ex-miner must be able to carry out fairly heavy manual work compatible with his age for the remainder of his life; in fact at no stage must he be more than 30 to 35% disabled.

In order to obtain this result, we would state definitely that with the knowledge available to us to-day all men who show pin-hole nodulation should be removed from exposure to dangerous dust, the question of disability and compensation being a separate issue. In our opinion, this standard should prove satisfactory for men with exposure to dust of 20 to 25 years' duration. In the event of such changes becoming evident with 15 years' exposure or less, a somewhat severer standard must be adopted, and conversely, if pin-hole nodulation becomes evident only after 35 years' exposure, the standard may then be somewhat relaxed. Even with suspension from the industry at this stage it is possible that in some cases progressive disease might occur, but we feel that the proportion of cases so progressing would not be greatly in excess of the number of mine workers who could be expected to develop tuberculous disease of the lungs in any event.

Again, all cases of consolidation should be immediately removed from the industry as potential sources of tuberculous infection, and to speak of leaving such men in the industry "as their progression may not be dependent on further exposure of dust" is in our view equal to advising a man to leave his hand under a steam hammer, as once it has received one crushing blow no further injury can take place. Furthermore, we would repeat with the greatest possible emphasis the plea we have made over many years for periodic *x*-ray examination of the lungs of all mine-workers, this being the only means by which the disease may be detected and suitable action taken before eventual advance to total disability becomes inevitable. It has been our practice for many years to carry out periodic examination of the lungs of the majority of workmen in the anthracite area of the South Wales coalfield, and all too often we see men already in the late stages of the disease who have only recently noted any disability.

These then are an outline of our views regarding the stage at which men suffering from pneumoconiosis should be removed from dust risk. Perhaps Dr. Meiklejohn, who has had considerable experience of this type of work, would be kind enough to give us his personal opinion. Dr. C. M. Fletcher, in his second Goulstonian Lecture printed in the *Journal* of June 5 (p. 1065), stated that "the urgent necessity for the institution of an appropriate system of periodical x-ray examinations, which alone can give our coal-miners security from pneumoconiosis, cannot be over-emphasized." "The sincerity of the industry's and the Government's concern with the health of the coal-miners will be judged by the speed and thoroughness with which such a system is instituted in this country." At the present time the Government and the industry seem to be doing all in their power to prevent the development of such a scheme and to discourage private workers in this field. Furthermore, the power of suspension has now been removed from the Silicosis Board and the compensation payable to partially disabled workmen severely reduced. These factors will contrive to force many men to remain in the industry where they may or may not be under proper observation. If this state of affairs is allowed to continue and if no action is taken to combat these retrogressive changes which undermine many years of struggle, then a future which will be truly tragic is inevitable and many young men will join their fathers and grandfathers in the cemeteries of mining villages years before their time. Their epitaph may well be, "We died that nationalization might succeed."—We are, etc.,

ARCHIBALD HARPER.
J. MANSEL MORGAN.

Neath.

Artificial Insemination

SIR,—Despite the risk of appearing unduly sensitive I am requesting you to allow me to reply in your columns to certain criticisms in the report of the Archbishop of Canterbury's Commission on Artificial Insemination bearing upon a memorandum issued by the Medical Defence Union. The Union's memorandum did not purport to be an exhaustive study of the subject from all angles, and this the Union had neither the facilities nor the intention to undertake. It was written, as the headnote states, solely with a view to the protection of practitioners who engage in the practice of artificial insemination. In these circumstances the criticism that the memorandum is "superficial" is entirely unjustified.

It is, moreover, stated that the memorandum is "grossly misleading," but no indication is given of the reason for the use of such strong language. The chapter of the report dealing with the legal aspects of artificial insemination fails to reveal any basis for the criticism, unless it be that the writers have confusedly attributed to the Union the authorship of an article in the *British Medical Journal* (1945, **1**, 40) or assumed that the Union shared the views expressed by the three authors of that article. Should this be so, it is appropriate now to repudiate on the Council's behalf both the authorship of the article and agreement with the views therein expressed.

It is conceded, of course, that the Union's memorandum did not make reference to the difficulty that will arise over the registration of the birth of an infant resulting from A.I.D., since registration is not a matter with which the practitioner is normally concerned. The difficulty is a very real one, and to it further consideration will be given by my Council in the future; for this constructive criticism we are grateful.

It is regrettable that the authors of the chapter in question should have thought it proper to publish strong condemnation of the views expressed by the Union in a matter of complexity and public importance without first giving to the Union some indication of their intention and an opportunity of expounding its views. The very eminence of the authors in their own field promotes an expectation that the usual courtesies would have been observed. It should further be noted that permission to publish the Union's memorandum as an appendix to the report was only sought when the report itself was in galley proof and at a time when the urgency of publishing the report precluded the Union from properly considering whether the memorandum —prepared as it was with a different object in view—was suitable for such publication. I add with regret that neither then nor at any other time was there any communication to the Union that the memorandum was or would be made the subject of criticism.

Considerations of space prevent me dealing fully with the contents of the report, and it must suffice to say that, except for the single matter mentioned above, there appears at present no need for the Union to modify in any way the advice to its members set out in its memorandum.—I am, etc.,

ROBERT FORBES,
Secretary.

The Medical Defence Union,
London, W.C.1.

Inclusion Bodies of the Erythrocyte

SIR—With reference to your annotation (Aug. 28, p. 431) entitled "Inclusion Bodies of the Erythrocyte," we should be obliged if you would allow us to refute an opinion you attribute to us. Referring to our publication on this subject you state, "They are convinced that the siderotic granules of Grüneberg are different from the Pappenheimer bodies. . . ." This is, indeed, a complete misrepresentation of our views, for on page 255 of the paper referred to[1] we stated, "In view of these considerations it would appear that the siderotic granules described by Grüneberg (1941a and b, 1942) and by Doniach *et al.* (1943) are probably fundamentally similar to the Pappenheimer bodies."

On the other hand, we wish to emphasize our belief that these inclusion bodies, which stain with Romanowsky stains and give a direct positive reaction with potassium ferrocyanide and hydrochloric acid, are fundamentally dissimilar from the siderotic granules described by Case.[2 3 4] The arguments supporting this belief were discussed in our paper, but it may be mentioned here that Case's granules differ in respect of occurrence, morphology, and staining reactions from the erythrocytic inclusions described by Grüneberg in curly-tailed mice, and by Pappenheimer *et al.* and by ourselves[1] in man.

Your annotation also refers to our having collected some evidence that the granules of basophilic stippling due to lead poisoning are similar to Pappenheimer bodies. It may be of interest to note that we have extended our studies in this field and have confirmed that the basophilic granules of lead poisoning present many similarities to the Pappenheimer bodies as regards development, staining reactions in the bone marrow and in the peripheral blood, and the effect of splenectomy. This work has recently been submitted for publication.—We are, etc.,

ALEX. J. S. MCFADZEAN.
Glasgow. L. J. DAVIS.

REFERENCES
1 *Glasg. med. J.*, 1947, **28**, 237.
2 *Nature*, 1943, **152**, 599.
3 *J. Path. Bact.*, 1945, **57**, 271.
4 *Proc. roy. Soc. B.*, 1946, **133**, 235.
5 *J. Genet.*, 1942, **44**, 246.
6 *Quart. J. Med.*, 1945, n.s., **14**, 75.

Production of Rh Agglutinins

SIR,—I must apologize to Dr. R. J. Drummond (Aug. 28, p. 443) and Drs. Sheila T. Callender and Z. V. Paykoç (Jan. 26, 1946, p. 119) for giving the impression that they suggested that "patients suffering from certain diseases were more apt to produce antibodies." This idea was communicated to me in conversation, but I have quite forgotten with whom, or who originated the idea—it may even have been myself. I still think it is a hypothesis worth considering, and if anyone who has suitable patients available is able to test the idea the results, whether positive or negative, would be interesting.

I must apologize for a *lapsus ratiocinationis* pointed out by Professor Cappell—the product of the mating Rr × rr is equal numbers of Rr and rr—not 3 rr to 1 Rr as we wrote. This error does not affect our argument or conclusions.—I am, etc.,

London, N.W.10. GEORGE DISCOMBE.

Acute Porphyria

SIR,—I read with great interest Dr. Ernest Petrie's article (May 15, p. 926) on "A Case of Acute Porphyria." The article reminded me of a similar case published by me in 1917 (*Z. klin. Med.*, **84**, 3) which showed the typical symptoms of chronic porphyria, including a positive benzaldehyde (Ehrlich's) test. Owing to some unusual features I should like to give a short summary of the case.

A 24-year-old girl was admitted to hospital suffering from frequent attacks of severe abdominal colic; negative family history. Case history: temporary amenorrhoea and irregular menses; had been suffering from these attacks for last 4 years, thought by some doctors to be due to peptic ulcer, by others to be of nervous origin. After the attacks she passed an acid cherry-red urine, darkening on standing, and becoming brown-red on longer standing. Trace of albumin, hyaline and granulated casts in the deposit. On addition of alkali the colour turned yellow, but on acidification the red colour returned. Negative guaiac and distinctly positive Ehrlich's benzaldehyde tests. Pigment not soluble in ether. Prof. Salkowski, who examined the urine, reported: pigment soluble in amyl alcohol, slightly soluble in acetic ether, positive Ehrlich test but negative urobilin test; spectroscopically the acid urine gave a diffuse absorption band in the region of the urobilin band. Salkowski came to the conclusion that the abnormal pigment was "probably so-called 'skatol-red,' which, however, was not sufficiently well characterized." Hot baths with subsequent diaphoresis seemed to relieve the pain. Patient died 1½ months later in a coma which occurred suddenly with epileptiform convulsions in all extremities, jerking of the head to the left, and horizontal nystagmus.

The results of post-mortem examination were: atrophy of musculature, dehydration, slight oedema of pia, hypoplastic aorta, small heart with moderately hypertrophied left ventricle. Pathologist's report: cortex of kidneys much reduced; in periphery tubuli very much reduced, fibrosis and small-cell infiltration; slight fatty degeneration in tubuli but more so in Henle's loops; a few glomeruli showing amyloid degeneration (these findings did not, in his opinion, justify the diagnosis "death from uraemia"); fatty degeneration in most lobuli of liver, slight proliferation and small cell infiltration of peripheral fibrous tissue.

In the light of present knowledge of porphyrins the described data—red urine pigment not soluble in ether but soluble in amyl alcohol and slightly soluble in acetic ether, negative urobilin and positive benzaldehyde tests, absorption band in the region of urobilin—seem, no doubt, to justify the diagnosis of coproporphyrin porphyria.—I am, etc.,

London, N.W.11. M. G. GOOD.

Sturge-Kalischer-Weber Syndrome

SIR,—Dr. C. Worster-Drought (Aug. 28, p. 414) gives a valuable summary of the literature of this syndrome and describes a case of naevoid amentia with bilateral calcification of cerebral vessels.

A boy, aged 16½ years, was admitted to Cell Barnes Colony in 1939 and died of pneumonia in 1940. He was a quadriplegic epileptic idiot, with but one cutaneous naevus above the nose and practically central. Radiographic examination showed evidence of much naevus on the left side and some to the right of the centre line. The specimen itself shows more than the radiograph suggests, the condition being most marked in the left temporo-sphenoidal and occipital regions, but also present in the right frontal and parietal areas. This is the only true case seen at the Colony out of 1,300 admissions.

Another has the typical cutaneous naevus, widely distributed, right more than left, and is of imbecile grade. There is some evidence of paresis, particularly on the left, but no fits and no *x*-ray evidence of meningeal naevus. She is regarded as a probable but not proven example of naevoid amentia.—I am, etc.,

St. Albans. NOEL H. M. BURKE.

Dental Caries in Children

SIR,—Lady Mellanby and Dr. Helen Mellanby (Aug. 28, p. 409) claim to have shown that better-formed teeth are less liable to decay. If they mean that such teeth are less liable *because* of their better structure their data seem to disprove the claim. They suggest that the lessened caries incidence in 1947 compared with that in 1943 is due to the better calcifying properties of the diet, and they also state that the actual factors initiating caries remain obscure.

To come to such conclusions they must ignore not only most of the work of other students of the subject but also some of their own findings. Although the data are not statistically analysed, it is apparent from Table IV that there is a very close correlation between hypoplasia and high caries incidence in 1943, but in 1945 this correlation is slightly reduced, and in 1947 it is very much weaker and possibly insignificant. This is because the caries incidence on the better-formed teeth has actually *increased* by 1947. The better the structure the greater is the increase, and the worse the hypoplasia the greater is the decrease in caries. Both increases and decreases between 1943 and 1947 appear to be significant for each grade of tooth structure. In other words, the decrease in hypoplasia incidence by 1947 has been most marked in the carious teeth and least in the non-carious teeth. It follows that improved structure cannot account for most of the decrease in caries, but only a statistical analysis could show how much, if any, it can account for. Certainly some other factors are responsible for much of the improvement, and these factors, which seem to

have been correlated with hypoplasia incidence in 1943, had almost ceased to be so by 1947. The correlation between structure and caries incidence in 1943 was not, then, mainly one of cause and effect, and thus most of the evidence for the authors' theory disappears.

The orthodox theory, which the authors consider obscure, explains the improvement as due to the change from a high-sugar and white-flour diet to one of whole vegetables, low sugar, and high-extraction flour. The 5-year-olds examined in 1947 had been exposed for longest to the bulkier, more detergent, and low-sugar wartime diet. Apart from the lesser tendency of such diet to stagnate and ferment about any teeth, it also acts by promoting bone growth, and so preventing overcrowding of the teeth, and by removing other potential stagnation areas by attrition. Such factors begin to work almost from the time of weaning.

The correlation between caries and hypoplasia in 1943 and 1945 can only be explained by assuming that both are due to a common cause. The education of the mother might be a factor, but so little is known of the extent or the causes of variation in sugar consumption by young children that it is almost useless to speculate on the possible causes of the correlation. That sweet consumption varied widely before rationing is well known, and I have found that even now sugar and sweet consumption varies much more widely than one would expect.

It would not be worth while pointing out the fallacies in the authors' reasoning if they merely urged that we should consume more calcium, phosphorus, and vitamin D. However, they conclude that such is the *best* available way of attacking caries. Most well-informed students of the subject believe that a lower sugar consumption or higher fluorine intake, or use of a higher extraction flour, would, even separately, be far more effective, and it is even possible that caries could be entirely prevented at all ages by such measures used in combination.—I am, etc.,

London, N.W.6. R. B. D. STOCKER.

Stainless Steel Wire

SIR,—Messrs. A. Lawrence Abel and Alan H. Hunt (Aug. 21, p. 379) are to be congratulated on a splendid series of cases sutured with stainless steel. They have added materially to the evidence that one of the simplest, soundest, and probably the best method of repairing herniae is by darning. Also, they have shown that the use of a suitable non-absorbable suture obviates a preliminary attack on the patient's thigh or the effort to squeeze a last reluctant centimetre out of a strip of the external oblique aponeurosis.

I like their repair for incisional herniae in which they darn across the gap without drawing the edges together, but I shall try that principle only in the very large defects. I believe a continuous darn is unnecessary for femoral herniae, several interrupted sutures serving similarly and being easier to insert in the depths. I endorse their views on the use of a non-irritating, non-absorbable suture for closing abdominal-wall incisions, and particularly is it necessary to use such sutures in infected wounds and in cachectic subjects.

Unfortunately their incidence of sepsis in either clean or infected incisions is not mentioned, there being merely a hint that sepsis may possibly have occurred sometimes. This does not assist the judgment of others. I have tried using wire sutures and have found them rather difficult to manage, especially in the deeper tissues, and if one's assistants vary frequently the entanglements increase. At skin level wire is fairly easy to use. No doubt as the years go by the art, as in the case of these authors, can be successfully mastered at depth. My preference is for a suture which serves the same purpose but neither kinks, fractures, nor grates. In practice I find that nylon sutures are equally non-irritating, and behave well in infected tissues. A double strand of No. 7 is strong enough for any closure or reparative procedure on hernia, and is easy to work with.

My own histological studies are on material from reopened wounds in humans, and for what any such studies are worth they indicate a very low level of tissue disturbance by nylon. My clinical results have shown a very low incidence of sepsis in clean and infected wounds, personal figures for clean darns in inguinal herniae being over 150, with sepsis once (in a scrotal haematoma). Figures for infected wounds are being assessed on other types of cases. Criticisms of nylon are not justified when derived by inference from microscopical studies of various sutures buried in the smaller domestic animals, the only real test being what happens in cases. One cannot help wondering whether before darning with steel it is advisable to be sure that one's patient is neither a mariner nor an air pilot, and so liable to set the compass spinning after treatment! I presume the chances of being struck by lightning are not increased.

We are not yet finished in our hunt for the best suture material. Braided nylon, which I have recently tried, is beautiful to work with. Our present ideas of the virtuous monofilamentous strand may give way to a belief that the good behaviour of nylon and steel in infected wounds depends not only on their low irritation of the tissues but also on the fact that they are, unlike silk and cotton, non-wettable substances. Bacteria hiding between the strands of silk from hungry leucocytes has never strongly appealed to me as a theory. The answer may yet lie in braided plastic or braided metal. Perhaps when one of these industries is nationalized the resulting shortage may decide the issue for the other.—I am, etc.,

Oxford. G. E. MOLONEY.

Diabetic Coma

SIR,—The letter by Professor D. M. Dunlop and Dr. J. B. Donald (Aug. 14, p. 352) contains an important warning in connexion with the treatment of diabetic coma with large doses of insulin. This is that hypoglycaemia in an unconscious dehydrated patient is not always easy to recognize. This occurred in a patient, 67 years old, whom I treated recently for diabetic coma.

Using large doses of insulin intramuscularly as recommended by Professor R. H. Micks (July 24, p. 200), but unfortunately without immediate blood-sugar control (the patient was treated during the night), a fatal degree of hypoglycaemia was produced. This was only revealed by subsequent biochemical estimations of samples of blood taken at intervals during the night. The patient was carefully observed at half-hourly or hourly intervals for any change in her condition, and particularly for signs of hypoglycaemia, but none were detected. Continuous intravenous saline was given. Three hours before death a blood sample (estimated later) showed the blood sugar to be 17 mg.%, blood urea 78 mg.%, and blood chlorides 631 mg.%. At the commencement of treatment 14 hours previously the values were blood sugar 408 mg.% and blood urea 101 mg.%.

It is clear from such an experience that it is dangerous to give large doses of insulin to a patient in diabetic coma without facilities for *immediate* blood-sugar control. This particularly applies, as Professor Dunlop mentioned, when the treatment is in the hands of an inexperienced physician such as myself.—I am, etc.,

HOUSE-PHYSICIAN.

Lumbar Sympathectomy for Varicose Ulcers

SIR,—I believe that Messrs. John Borrie and E. Vernon Barling in reporting (July 24, p. 203) successful healing of four chronic varicose ulcers with lumbar sympathectomy have publicized a further remedy of this condition. I learned of it in 1946 from Dr. Marcus Werquin, of Paris, a former assistant of Professor Leriche. He told me that he had used lumbar sympathectomy effectively in these cases, but it was before he knew of the operative treatment of varicose veins.

Since that time I have been looking for an obstinate ulcer in which lumbar sympathectomy seemed to be necessary. I have met two ulcers in my fairly considerable experience in the last three years which resisted the remedies laid down by Thomas Baynton in 1797 and retaught so ably by Mr. Dickson Wright since 1929. The first man was not well enough for a sympathectomy, and I have had to admit failure: he had an ulcer which Baynton found resistant—i.e., below the external malleolus. In the second patient my friend, Dr. Kenneth Wolferstan, of Sunbury-on-Thames, is achieving the healing which I failed to obtain. I mention these because I believe that the patients who require lumbar sympathectomy for the healing of varicose ulcers are very few if the ordinary remedies are faithfully applied.

For instance, in reading the case reports of Messrs. Borrie and Barling's patients I did not think that they had received what could be regarded as an efficient operation for their varicose veins. In my experience no ligature, whether high or low, single or multiple, will permanently clear up varicose veins, ulcer, or eczema. I find that permanent effectiveness is attained only by high ligature, division of all the branches, and the certain destruction of the entire column of the internal or external saphenous vein from their beginnings at the malleoli to their endings. I think it is essential that treatment for varicose veins be thoroughly instituted before resorting to the attractive procedure of lumbar sympathectomy, which carries a mortality and will be followed by recurrence of the ulceration if the varicose veins, which are a progressive condition, continue to exercise their deleterious effects on the scar tissue about the ankle.

I agree with Messrs. Dickson Wright, Rowden Foote, Kenneth Wolferstan, and others that all varicose ulcers can be healed if we will apply the supportive bandaging ourselves frequently and faithfully. I think that, while lumbar sympathectomy has a place in the treatment of ulcerated legs when complicated by arterial and trophic conditions, it is a small one.—I am, etc.,

London, W.1. HAROLD DODD.

Genu Valgum

SIR,—Mr. H. A. Brittain's article on genu valgum (Aug. 21, p. 385) deals with the most common deformity of early childhood. Twenty-eight years ago, when rickets was still a common disease, it was the custom to take children with rachitic knock-knees off their feet or to put them in irons. Bony deformity and loss of muscle tone were the causal factors, and the latter was considered the more important. Immobilization in bed and to a less extent in irons aggravated the muscle weakness. As the orthopaedic surgeon rarely sees these cases until the children are 2 years or older, the aetiology and early treatment as seen and practised at an infant welfare centre may be of interest. These children were allowed to exercise freely, their heels and soles were wedged, and they were given intensive treatment for rickets. The results more than justified the break-away from more orthodox methods.

In the far more common non-rachitic cases of genu valgum I believe the lack of muscle tone is the primary trouble and the stretching of the internal lateral ligament of the knee secondary to it. I have been struck by the fact that I see a larger proportion of children with knock-knees in private practice than I did over 20 years at an infant welfare centre. The explanation would appear to be that the children of the comparatively well-to-do spend more time in their prams and less on their feet than the children of the poorer districts, who run about during most of their waking hours.

The preventive treatment of genu valgum is attention to the musculature of the child throughout infancy. I need not detail the necessary measures here, but it is a fact that many infants with poor tone have to be "taught" to use their muscles, and exercises in weight bearing should be practised from the third month onwards. This is particularly important for the heavy child. The first efforts at walking are made on a wide base which throws a strain on the internal lateral ligament of the knee—the better the muscle tone and balance the sooner the walking base narrows. If at 15 to 18 months there is any evidence of genu valgum, the heels of the shoes are tilted ¼ in., increased later to 3/16 in., and the "gramophone record" referred to by Mr Brittain is put on. Exercises are prescribed, especially those which strengthen the quadratus femoris. A favourite one is carried out as follows: The child sits on the floor in the crossed-leg tailor position facing his mother, who sits on a chair. She places her right foot as a steadying block against the inverted sole of the right foot of the child and her left to his left. She then clasps his outstretched hands and teaches him to rise slowly to the upright position and then return slowly to the sitting position, keeping the legs crossed and the feet inverted the whole time. At first she takes most of his weight, but less and less, until he can do the exercise without assistance.

At two years or a little later the tricycle (kiddy-car) serves, with one precaution, as good exercise for the leg and thigh muscles. The wooden bar which runs from the seat to below the handle-bars should be well padded, so that the child shoves on the pedals with the knees well apart and the legs and feet inverted. A similar arrangement can be made on a toy motor-car or engine with pedals. The more fortunate child with a pony has the perfect apparatus.

It was surprising to hear that Mr. Brittain has dealt with 8,000 cases of genu valgum in 15 years. Preventive measures or early treatment should reduce the numbers reaching the orthopaedic surgeon almost to zero.—I am, etc.,

Esher, Surrey. ALLAN HAMILTON.

Procaine Metabolism

SIR,—Procaine metabolism has been investigated during the last 15 years with growing intensity. Althoff[1] recently summarized facts and theories in a German publication. Thus, I hope, some findings dealing with the mode of action of procaine will be of general interest.

Recently Burgen and Keele[2] investigated the quantitative metabolism of procaine in the cat by determining procaine and *p*-aminobenzoic acid blood levels. They found rapid and extensive hydrolysis after intravenous injections. Neither Burgen and Keele nor other workers in this field (Hazard and Ravasse,[3] Dunlop[4]) published data on the second product of procaine hydrolysis, diethylaminoethanol. In experiments on frog's muscle (rectus abdominis), using a modification of the Ehang and Gaddum technique (Soehring and Wiedow[5]), we confirmed the decrease in the reaction to acetylcholine described by Riesser and Neuschlóss[6] when adding procaine to the bath. We found that this effect is followed by a marked increase in the tonus of the muscle, while acetylcholine excitability simultaneously is restored. Using small concentrations of procaine the response to acetylcholine can surpass the initial effect. These phenomena can be produced in the same way by equivalent concentrations of diethylaminoethanol. Hauschild and Landbeck[7] found an important sensibilization to adrenaline when traces of diethylaminoethanol were given.

Modern procaine therapy thus appears as a special form of sensibilization to adrenaline and acetylcholine, due to diethylaminoethanol set free by hydrolysis. The mode of action of this interesting compound cannot be discussed here in full detail. Its activity on surface tension[8] may be considered, as well as chemical composition, in some step of the choline metabolism.[9]—I am, etc.,

University of Hamburg. KLAUS SOEHRING.

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Gynaecological Psychiatry

SIR,—I have read the article by Mr. Linton Snaith and Dr. Brenda Ridley (Aug. 28, p. 418) with great interest. There is, however, one problem fundamental to investigations of this kind, so far as the question of female orgastic ability is concerned, which the authors have left unanswered and unsolved. What is a "normal woman"? All investigators agree that 40–50% of their women patients show lack of orgasm ability, and most authors regard this as a deficiency, physical or, mostly, psychological, that can and must be cured.

But before making this assumption would it not be our duty to prove to ourselves that the "normal woman" is endowed with an orgastic ability as universal and automatic as the man? In my opinion this assumption, so universally made, cannot be proved. As Terman has pointed out in *Psychological Factors in Marital Happiness*, "Woman's susceptibility to orgasm is either an evolving trait not yet fully established in the phylum or a regressive trait on its way out." And since we can know next to nothing about the remote psychological past of the human race our only way to answer this question is to investigate whether or not female orgastic ability could have played any part in facilitating the survival of the human race. It does not seem to have such significance.

To all bisexual organisms where successful copulation is absolutely necessary for the survival of the species, orgasm in the male acts as a fixing sensation additional to the organs of fixation, genital and extragenital, otherwise developed. With a few exceptions, most interesting in their appearance but which cannot be described here, the part of the females is so passive that they would not submit to copulation at all if they were not, during a particular season, stimulated hormonally to do so. They cannot, once copulation has begun, interrupt it of their own will. Fixation, physical and psychological, is exclusively achieved by the male, and this is true right up the evolutionary scale even to the anthropoid apes.

It remains for the psychologists to tell us why, in the absence of any phylogenetic history of female orgasm, the human female should in 40–50% of their number show orgasm ability. In my opinion this ability is linked up with the development of human self-consciousness, and I am inclined to regard female orgasm ability as "an evolving trait not yet fully established in the phylum." But I would refuse to assume that every female patient had already achieved or been born with this full degree of orgasm ability and should therefore be "cured" if found deficient.

Ever since and before van der Velde this assumption has led to great disappointment in doctors and patients, and while enlightenment, sex education, and treatment of all kinds do cure those cases where orgasm ability is only repressed by circumstances, it does nothing for those where this ability is non-existent. It makes the patients feel they are human freaks and leaves them more disappointed than if no cure had ever been attempted. It would be most interesting to hear from Mr. Snaith and Dr. Ridley what percentage of cases under their care have in fact been cured and what was the fate of the "incurables."—I am, etc.,

Pinner, Middlesex. EDWARD ELKAN.

Use and Abuse of Tonsillectomy

SIR,—I have read with interest the correspondence on the "Use and Abuse of Tonsillectomy," as it touches on a problem which frequently confronts the general practitioner. Dr. A. G. Newell (Aug. 21, p. 398) suggests that the decision for removal of tonsils and adenoids be left to the parents. I hardly think this is practicable, as most parents go to their doctors to be advised, and doctors as a rule do not "dictate to them as to necessity."

Clinically I doubt if there is any more satisfactory operation in childhood than the removal of septic tonsils and adenoids. The ailing child, with frequent colds, gastric upsets, attacks of earache, and even running ears, seems to improve remarkably after the operation.

Up to the age of 3 to 5 years the tonsils and adenoids act as a defence and filter, preventing entry of infection into the blood stream. With each attack they form antibodies and confer an immunity against infection by countless organisms, which last until late in life. But once this function is performed they cease to be an advantage to the body, and are often only collections of pus and a frequent source of infection. At least in cases where pus is obviously present, with tonsillar glandular enlargement and obstruction to breathing, the parents should be advised that the removal of the child's tonsils and adenoids should be performed.—I am, etc.,

Blyth, Northumberland. A. M. TAIT.

Tonsillectomy or X-ray Treatment

SIR,—No reference has been made to *x*-ray treatment in the interesting correspondence following the enquiry of Mr. William Ibbotson (May 22, p. 1002) as to what can be done for the many children awaiting tonsillectomy. *X*-ray treatment is a most valuable alternative to operation, as the tonsil is one of the most radiosensitive parts of the body (as Regaud pointed out about 1904). In children, quite small doses usually reduce the tonsil (and adenoid) enlargement to normal, and lead to rapid benefit in the general health, as I have shown in the *Journal* (1930, **1**, 216 and 1197, and **2**, 228; and 1932, **2**, 665).

In the technique large doses and large fields should be avoided; the best results have followed small fields behind and below the angle of the jaw (or also from below and behind the mastoid) converging on to the tonsil. Doses of 100 to 200 r weekly or fortnightly will be found to lead to rapid improvement in most cases, and operation can be rendered unnecessary. Once the tendency to physiological hypertrophy has been outgrown the tonsils, in cases followed up, have shown no further enlargement or infection.

In this method there is no risk of skin change even in blondes; and the vicious circle of hypertrophy leading to crypt blockage and infection is broken so simply, and with such restitution to the normal of a structure which probably has a useful function, that *x*-ray treatment should be regarded as the treatment of choice. That it has not come to be so considered is probably due to a too exclusively surgical approach to the subject, and to the preoccupation of most radiotherapists with the more pressing problems of cancer.—I am, etc.,

London, W.1. J. H. DOUGLAS WEBSTER.

Prevention of Venereal Disease

SIR,—Both Lord Horder (July 17, p. 171) and Dr. R. A. Lyster (Aug. 28, p. 441) seem to rely mainly on the opinion of the Trevethin Committee contained in the sub-paragraph of para. 11 of their report, which was quoted by Lord Horder. It seems to me that it would have been fairer to quote also the qualifications with which the Trevethin Committee guarded their opinion. The following extracts from the Report seem to be pertinent:

"13. We think, however, that we are justified upon the evidence in coming to the following conclusion: That in a community where there has been efficient instruction and where there is such a condition as arises from the control and influence mentioned above substantial results may reasonably be expected to follow from prophylactic measures but that the actual result is often less favourable than has been claimed."

In this "the control and influence mentioned above" refers to conditions in the fighting Forces. With regard to these the Committee said (para. 12):

"Where satisfactory results were recorded, a great difficulty arises in determining how far those results were due to the prophylactic methods employed, or were influenced by other factors in the case, such, for example, as regulation of hours of leave of absence, control of or exclusion from dangerous places, liquor control, imposition of penalties upon men becoming infected, the provision of facilities for recreation and the moral effect in time of war of appeals for restraint on grounds of patriotism. Further, the prevalence of disease among women has probably varied widely in different areas and it has rarely been measured."

The recommendation that the law should be altered to permit properly qualified chemists to sell *ad hoc* disinfectants was qualified by the following (para. 14):

". . . provided such disinfectants are sold in a form and with instructions for use approved by some competent authority. We suggest that the Medical Research Council should be invited to undertake this task. We think, however, that the commercial advertisement of *ad hoc* disinfectants should be prohibited."

Neither the M.R.C. nor any other authoritative body has undertaken the task. The Committee concluded on the subject of self-disinfection by saying:

"16. In conclusion on this head, our view is that money spent on a general system of providing facilities for self-disinfection would certainly be less profitable than money spent either on treatment of disease or on those measures of education and improvement of social conditions to which we have referred above."

As I have taken a close interest in the prevention of venereal diseases for over forty years, studying methods and rates in our own and other countries whenever I could find them, I should like to describe here modifications made in my own views on prophylaxis by self-disinfection during that period. Until 1919 I was an enthusiastic advocate of the method, and when, in 1918, the D.G., A.M.D., Sir John Goodwin, asked my opinion on the probable effect of its introduction into the Army, I predicted a rapid emptying of military V.D. hospitals. In accordance with my advice, D.D.'s M.S. of the different commands in this country were made personally responsible for furthering the method by every means in their power, and inspectors were appointed to see that the facilities were freely available without any soldier having to ask specifically for the chemicals. I watched the V.D. rates in the Army at home very closely, and at the end of eighteen months had to admit that the matter was not proving so simple as I had at first thought.

At this time there was a strong agitation for broadcasting advice on the subject of self-disinfection to the civilian public. It was pressed with such claims for its probable effect as that, under it, V.D. in this country would quickly reach the vanishing point, and some advocates held that, considering that we had such a simple means of preventing these diseases, it was a waste of public money to provide facilities for their free treatment. My experience of its use in the fighting services had, however, taught me that, although it might eventually succeed in conditions permitting personal instruction, it would never do so in an undisciplined community instructed only by pamphlets. I stated this view at a meeting of the Royal Sanitary Institute in 1919 before I knew the views of the Local Government Board on the question. Further, it seemed to me that if, under such conditions, public health authorities advocated self-disinfection as a means of prevention of V.D., sexual promiscuity would increase and the increased numbers of exposures to infection would not be counteracted by the measures advocated; the result would be an increase in V.D. On the question of fear as a deterrent from extra-marital intercourse which is implied in this opinion, the Trevethin Committee held a different view, since they said:

"It is urged by some that any system of disinfection would tend to increase the number of exposures and to raise the disease rate. We have received no evidence of facts in support of this view and we are inclined to think that those who hold it attach too much weight to the deterrent effect of the fear of disease."

It is questionable whether the Committee would have held this view if they had had the evidence which we now have of great increases in the incidence of V.D. in the armed Forces since the men learnt how easily gonorrhoea is cured by penicillin.

Dr. Lyster says that many witnesses before the Trevethin Committee, including himself, "produced overwhelming evidence of the dramatic reduction in V.D. that follows the introduction of self-disinfection." The Committee does not seem to have been made wildly enthusiastic for a policy of self-disinfection by this evidence. As part of my own evidence before the Committee, I prepared a critical review of all the evidence I could gather from the literature and elsewhere on the value of disinfection, both skilled and self-applied, in the prevention of V.D. It was a lengthy document, of over 25,000 words, its prolixity being due to long quotations, with all statistical tables, from the works studied. Before sending it to the Trevethin Committee I submitted it to criticism by an eminent medical statistician, who made many valuable amendments. I read the evidence given before the Committee and did not find in that submitted by Dr. Lyster any new facts to alter the conclusions I had drawn from my review. If Dr. Lyster has conclusive evidence on the value of self-disinfection I suggest that he give it now after submitting it to examination by a statistical expert. My own view that self-disinfection has not succeeded even in the favourable conditions provided by the armed Forces has been strengthened by the high rates in those stationed in highly infected communities. If it fails in such circumstances, how could it succeed with civilians instructed only by printed matter? I agree with those correspondents who believe that broadcasting advice on the lines advocated by the N.S.P.V.D. would be harmful by increasing the incidence of V.D.—I am, etc.,

London, S.W.1. L. W. HARRISON.

POINTS FROM LETTERS

Treatment of Chronic Varicose Ulcers

Mr. N. N. TERESHCHENKO (Wandsworth, London, S.W.) writes: In connexion with Dr. P. E. Roland's letter concerning the treatment of chronic ulcers (Aug. 21, p. 399), may I inform him that division of cutaneous nerves was first described by John Hilton (see *Rest and Pain*, pp. 148–52 in the 1905 reprint of the 5th edition)?

Treatment of Typhoid Carriers

Dr. ARTHUR COMPTON (London, N.W.3) writes: In view of the somewhat disappointing results reported by Dr. R. M. Fry and others (Aug. 7, p. 295) of the treatment of typhoid carriers with sulphathiazole plus penicillin, and of your annotation thereon (p. 305), may I call your readers' attention to the account of a successful clearing up of the carrier state after various treatments, including sulphapyridine, failed to do so (Compton, *J. R. Egypt. med. Ass.*, 1943, **26**, 47)?

Obituary

J. K. JAMIESON, M.B., LL.D.

Professor J. K. Jamieson, who died at his home in Blackrock on Aug. 20 at the age of 75, had been professor of anatomy in the University of Dublin from 1936 until his retirement last year. Previously he had been professor of anatomy in the University of Leeds for twenty-six years, and dean of the medical school there for nearly as long. John Kay Jamieson, the fourth son of Robert Jamieson, of Sandness, was born in Shetland in 1873. From the Madras School he went on to the University of Edinburgh, where he graduated M.B., C.M. in 1894. He was chief demonstrator in anatomy at Surgeons' Hall before taking up a similar appointment at Leeds. He worked there under Wardrop Griffith and succeeded him as professor of anatomy in 1910. It was during the 1914–18 war, when he was acting as deputy dean of the faculty of medicine, that his notable administrative ability was first shown. At this time he was also registrar and later in command of the East Leeds War Hospital in Beckett Street. In this early period he made a number of valuable contributions to his own special subject, particularly on the anatomy of the lymphatic system. In this connexion his studies of the lymphatics of the tongue and of the colon were notable and have since come to be regarded as classic contributions to surgical anatomy.

Jamieson was a man of sound scholarship and impregnable integrity and for many years he dominated the Leeds medical school. He was, in the words of a colleague, "a remarkably good dean." He had the gift of making—without ever appearing to do so—a number of individuals of diverse character and interests work as an effective team. He was wise and far-sighted, and it was largely due to him that the faculty expanded so effectively, particularly in the department of physiology and in the establishment of the Algernon Firth Institute of Pathology. From 1928 to 1936 he was a member of the General Medical Council, and he was also acting as examiner for the universities of Aberdeen, Belfast, Bristol, Edinburgh, Liverpool, Manchester, and Sheffield. When he retired from the Leeds chair of anatomy early in 1936 tribute was paid to his wise judgment, his tact, his ingenuity in handling difficult situations, and his uniformly imperturbable good temper in the conduct of business.

Jamieson was then 63 and known throughout this country as a first-rate teacher of anatomy. Already many generations of Leeds University students had reason to be grateful to him. He was appointed to the chair of human anatomy at Trinity College, Dublin, in March, 1936, and continued in active work for a further eleven years. He succeeded Professor A. F. Dixon and was given the task of reorienting a department which was still faithfully conducted in the tradition of D. J. Cunningham. His lectures were always appreciated, but he excelled in informal teaching in the dissecting-room. He never forgot a student, and there were few whose admiration and respect for him was not tinged with affection. Beneath his rather forbidding exterior there was great kindliness, a sense of humour, and much modesty about much learning.

Professor Jamieson was a member of the Royal Irish Academy, a keen golfer, and interested in deep-sea fishing. He married Elizabeth, daughter of Dr. R. P. Goodworth, and she died in 1936. He is survived by a daughter and a son, Dr. John Jamieson. John Kay Jamieson was an outstanding anatomist, a fine administrator, and a remarkable personality who will long be remembered by his friends, his colleagues, and the many students he trained in Leeds and in Dublin.

Mr. P. R. Allison writes: When, as a student, I first met J. Kay Jamieson he was professor of anatomy and dean of the faculty of medicine. At what age his personality became fixed I do not know, but certain it is that for the twenty years I knew him he remained unalterably and imperturbably J. Kay Jamieson. Therein lay his immense popularity with all students, for he was a rock of reliability in a rapidly changing world. The Leeds school and its students meant so much to him that he must have enjoyed the affection with which he was regarded, but he never sought popularity or praise. He was unmoved by the winds that blew, whether they were gentle or harsh. He

had some sort of sympathy with every kind of student, good or bad, hard-working or slacker, for he did not judge men only by their ability to study medicine, yet his counsels were wise, considered, and free from prejudice, and often not what his supplicant wished to hear. He would give advice when consulted, but he rarely explained the reasons for his advice; it might be accompanied by a parable or proverb, but the foresight on which it was based usually became apparent afterwards. His quiet joy at the success of his students and his colleagues was infectious, so that none of us had any doubts but that Leeds was the best medical school in the world. He was in fact a leader. He treated everyone as grown-ups and expected them to behave like this within reasonable limits, so that he never found it necessary to have an attendance book at his lectures, and it was only the occasional "chronic student" who failed to attend.

His lectures must have been carefully studied and distilled, for they were virtually the same throughout the years. He spoke so steadily and used so many simple diagrams that the lectures could be taken down word for word, and we used to write down the jokes as well. When working for the primary fellowship I attended some of his lectures again and found that I could keep one sentence ahead of him all the time by referring to my original notes. Yet somehow he took the dryness out of the bones and put it into his humour and his mannerisms. His diagrams had been reduced to the simplest and clearest, and he obviously enjoyed drawing them. When he drew a perfect circle standing sideways to the blackboard and swinging his arm round at the shoulder, or when he drew a perfectly symmetrical thorax using both hands at the same time, he always roused the cheers and stamping which brought a twinkle to his eye and a slight elevation of the corners of his mouth. The graceful lifting of the hand to indicate that the applause was enough had in it the same confidence of obedience as that of the most accomplished policeman at a London crossroads. He appreciated the importance of physiology, but was justly content to be an anatomist. He taught form in relation to function without recourse to the muscle-nerve preparation, and when once consulted by Moynihan (of whom he spoke affectionately as "our Berkeley") about the feasibility of a particular operation he replied that "the limits of surgery are physiological and not anatomical."

After he had gone to Dublin I often wrote to him about problems of lymphatic anatomy in relation to surgery, but he retained a notable reticence and modesty about his specialty, and his letters often contained answers which were too honest to be really informative. He would write, "The subject needs a determined new survey. When our knowledge is assembled there is no clarity in it. Few realize that the distribution of the absorptive capillary network is very limited; little is known about the continuity of that network; there is a great deal of confusion about 'perivascular lymph spaces'; a great deal of our traditional descriptive anatomy is mere lively imagination and assumption taken from the magnificent drawings of the early workers with mercury who must have gone by the motto, *Ab hoc uno disce omnes.*" Yet he also gave encouragement, for about excision of malignant disease he would say, "It's wholly a question of surgical experience as to whether it's worth doing; it's up to you to try." Jamieson was a man from whom a little encouragement was exhilarating; his slight jerk of the head—while looking over the top of his glasses—was enough to determine the direction of a career.

J. G. WILSON, M.B., C.M.

Dr. John Gordon Wilson, professor emeritus of otology and chairman of the department of otolaryngology of the Northwestern University of Chicago, died on Aug. 13 at the age of 89. He had devoted himself to the study of aural anatomy and pathology for half a century, and was one of the best-known workers in this field in the United States.

A native of Edinburgh, he followed his graduation in 1890 at Edinburgh University with a period of foreign study in Berlin and Vienna, and particularly in Ewald's laboratory in Strasbourg, where he laid the foundations of his early work on *intra-vitam* staining. He returned to practice in Glasgow with an appointment to the staff of the Victoria Infirmary, and continued his researches into the anatomy of the ear and of the atrio-ventricular bundle of His. Impatience with the restriction of animal experimentation led him in 1900 to leave this country for a fellowship in anatomy at Chicago University. It was not long before the value of his work was recognized, and he became an assistant professor. He retained a connexion with this country by spending his vacations in the laboratory of his friend Dr. (later Sir Frederick) Mott at Claybury, where the abundance of fresh human material for anatomical study was an attraction. In 1908 Wilson was appointed professor of otology at the North-western University, with which institution he was still in intimate contact up to the time of his death.

In the first world war his desire to be early in the field led him to join the Canadian Expeditionary Force which came over in 1915. This later prevented his obtaining American citizenship until after the lapse of a sufficient number of years. During the years that followed he was busy in practice and in research, investigating especially the more recondite aspects of his subject, as a list of his published writings illustrates. In addition to early papers on the bundle of His and the mechanism of vertigo, he made valuable contributions to our knowledge of the nerves of the tympanic membrane, the taste-buds of the larynx, the comparative anatomy of the larynx of anthropoids, the utriculo-endolymphatic valve, and the patterns of the air-cells of the petrous temporal. Also well known were his studies of otosclerosis and labyrinthine disease.

In spite of nearly fifty years' residence in the United States John Gordon Wilson remained a Scot. His speech and dry humour were typical; and as he advanced in years his nostalgia was shown by an increasing interest in the history of Scottish medicine. He contributed papers to various journals on this subject, and his last published work, which appeared just before his death, was a memoir of Dr. Joseph Bell, the prototype of Sherlock Holmes, whom he clearly remembered from his student days. His work in otology gained recognition in the U.S.A., and indeed throughout the world. He was president of the American Otological Society and chairman of committees of the American Research Council on vestibular research and aural structure and function. He was a member of the Madrid Otolaryngological Society, and, most valued of all, member of the international Collegium Oto-Rhino-Laryngologicum Amicitiae Sacrum. Though afflicted in his later years by a failure of the organs to which he had devoted a lifetime of study, he retained the mental activity of a young man and an ability to keep abreast of the progress of science, not only in his own subject but in all branches of medicine, that was a continual source of wonder to those who had the good fortune to be associated with him. He died at the home to which he had retired in Old Bennington, Vermont.—G. A. E.

MR. WILLIAM DAWSON GALLOWAY, one of the senior surgeons on the honorary consulting staff of the Huddersfield Royal Infirmary, died in the Infirmary on Aug. 2 at the age of 58. He was born in London and was a student at Clare College, Cambridge, and at Guy's Hospital. He qualified M.R.C.S., L.R.C.P. in 1914 and took the Edinburgh F.R.C.S. in 1919. Immediately after qualifying he joined the Royal Navy and served for five years, both at sea and at the Naval Hospital in Malta. He was twice mentioned in dispatches. After several hospital appointments Mr. Galloway started in practice in Holmfirth in 1922, and was made a member of the honorary staff of the Holme Valley Memorial Hospital. In 1930 he was appointed honorary assistant surgeon to the Huddersfield Royal Infirmary. He was also consulting surgeon to Storthes Hall Mental Hospital. In 1939 Mr. Galloway took up residence in Huddersfield. He was a past president of the Huddersfield Medical Society. Mr. Galloway was a man of outstanding ability. While running a busy practice in Holmfirth he took the F.R.C.S. in 1927. Then he gave up his practice to concentrate on general surgery. In later years his greatest interest was in gynaecological surgery. He was always very eager to help any young surgical enthusiast, but he did not suffer fools gladly, and demanded the best from all who worked with him. Apart from his surgical achievements he had many outside interests. As a young man, he was a proficient middle-weight boxer, a keen rowing man, and a good "all the year round" swimmer. He also had a love of the bagpipes and was himself a player. He was a keen student of history and had a wide knowledge of military campaigns. His early death is a great loss to the Huddersfield district. Such was his zeal that he worked up to a few days before his death when he was obviously a very sick man. He will be sadly missed by his colleagues and by his many patients.—W. S. D.

Medico-Legal

ACTION FOR NEGLIGENCE IN DIAGNOSIS

WHITEFORD v. HUNTER AND GLEED

In the King's Bench Division, before Mr. Justice Birkett, on July 6 and following days the action was heard of Mr. James Forbes Whiteford, an American citizen, against Mr. J. B. Hunter, M.S., F.R.C.S., and Dr. Seymour R. Gleed. The plaintiff's claim was that in 1942, when the defendants were called in to advise him on the state of his health, they diagnosed his complaint as inoperable cancer of the bladder, and stated that his life might not be very long extended. He had thereupon given up his home and business in this country and returned to America; but in New York, some five months after this diagnosis had been made, he was examined by an American surgeon, who operated on him and found an inflamed bladder and fibrous prostate but no evidence of cancer.

Mr. Richard O'Sullivan, K.C., and Mr. Robert Fortune, instructed by Messrs. Billinghurst, Wood, and Pope, appeared for the plaintiff, and Mr. Cecil R. Havers, K.C., and Mr. H. C. Dickens, instructed by Messrs. Hempsons on behalf of the Medical Defence Union, appeared for the defendants.

The learned judge found that the plaintiff was entitled to damages against Mr. Hunter, and these were assessed at £6,300. Judgment was accordingly given against Mr. Hunter for that amount with costs, stay of execution being granted on the usual terms. It is understood that an appeal has been entered. Judgment was given for Dr. Gleed, the second defendant, with costs.

The Facts of the Case

From the opening statement it appeared that in March, 1942, Mr. Whiteford consulted Dr. Gleed for bladder trouble. Dr. Gleed examined him and suspected an enlarged prostate, but it was agreed to call in a specialist, and the patient was examined by Mr. Hunter, who found acute retention due in his opinion to the state of the prostate gland, and advised immediate draining of the bladder to be followed at a later date by the removal of the prostate. The bladder was accordingly drained suprapubically, and Mr. Hunter attended a fortnight later, on April 5, for the purpose of performing the operation. He found a hard indurated mass in the base of the bladder, running backwards from the trigone, about the size of the palm of a man's hand. He came to the conclusion that the mass was a carcinoma of the bladder of infiltrating type, that the tumour could not be operated on, and that it would be unwise to do anything further. He therefore closed the greater part of the bladder, leaving a tube for the purpose of drainage. Dr. Gleed was present at this operation, but it was Mr. Hunter who was in charge. On being informed of the position the plaintiff went to America, partly in order that his wife might be placed in the care of his brother, but in September, 1942, in the Memorial Hospital, New York, he came under the care of Dr. Benjamin S. Barringer, who made a cystoscopic examination under spinal analgesia and took specimens for pathological examination. Dr. Barringer came to the conclusion that the patient had a diverticulum of the bladder, with prostatic enlargement, causing urinary retention. At operation he found the bladder inflamed but no evidence of cancer. He removed a large portion of the fibrous prostate. After some further treatment, including electrical cauterization to remove further pieces of the prostate, the plaintiff recovered, and in 1944 returned to this country. The writ was issued in November, 1945.

Case for the Plaintiff

The only medical evidence given on behalf of the plaintiff was that of Dr. Benjamin S. Barringer, of the Memorial Hospital, New York, a specialist in genito-urinary surgery. The evidence had been taken on commission. Dr. Barringer stated that he saw Mr. Whiteford on Sept. 6, 1942. On cystoscopic examination he noticed several small areas on the wall of the bladder the nature of which he could not understand; he took a specimen for pathological examination, and it showed chronic cystitis but no evidence of cancer. He also saw the opening of a diverticulum in the base of the bladder. Accordingly he operated on the plaintiff on Sept. 15, and found an inflamed bladder, a small fibrotic prostate, and in the bladder itself the opening of a diverticulum, which was filled with calcareous material. He opened up the diverticulum and he removed a large portion of the prostate. After excising the suprapubic sinus he closed the bladder and left a drainage tube in place. There was no cancer of bladder or prostate. He summed up the whole of Mr. Whiteford's difficulties by saying that he suffered from a considerable bladder diverticulum and chronic cystitis.

Dr. Barringer was asked:

Assuming that Mr. Whiteford's bladder had been opened on March 22, 1942, and again on April 5 in order that a prostatectomy, if necessary, might be performed, and a cancerous growth was then diagnosed, what steps in your opinion should have been taken to verify such diagnosis?—A complete examination by means of the cystoscope and through the open bladder, and a pathological examination of any questionable areas.

In your opinion would there have been at that time any difficulty in making a cystoscopic examination of him?—No.

Or any danger in making such an examination?—No.

Would there in your opinion have been any difficulty or danger in then obtaining a section for pathological examination?—No.

In your opinion that should have been done?—Yes.

A further question was:

Was there anything you did, either in the examination of Mr. Whiteford, the operation you performed upon him and the subsequent lesser operation which you performed, as well as the treatments you prescribed for him, which were in any way unusual or beyond the ordinary skill and treatment of the medical profession?—No, not if he were a competent urologist.

In cross-examination he could not agree that when a bladder had been collapsed it would be practically impossible or very difficult to pass a cystoscope, provided the bladder retained enough fluid—as it generally did—so that most of it could be examined. He also said that he had never seen the taking of a specimen from the bladder cause a perforation or observable ulceration, though anything could happen in careless and crude hands. In re-examination he was asked whether it would have been possible for Mr. Hunter to have determined that cancer did exist without taking a specimen, and replied that that could have been determined, with all reasonable accuracy, by looking at it and by the feeling of it. "You can tell a skin cancer across the street, practically, if you see it on the skin." He added that he had at first thought that perhaps the patient did suffer from cancer, but from the pathological examination and his examination of the opened bladder—a combination of the two, not the pathological examination alone—he decided that he did not.

Case for the Defendants

The principal witness for the defence was Mr. J. B. Hunter, who was submitted to a long examination and cross-examination. Questioned on the use of the cystoscope, he said that it was not his practice, when dealing with acute retention, to use this instrument, and this, in his opinion, was a case of acute retention. Asked by the learned judge to elaborate this, Mr. Hunter spoke of the damage to the posterior urethra which might follow such introduction or attempted introduction of a cystoscope. Describing the indurated mass at the base of the bladder, he said that the mucous membrane over the mass was thickened, changed in colour, and had very indefinite edges. He came to the conclusion that there was a carcinoma of the bladder, submucous and infiltrating, and that it was too large to be removed. Asked about the desirability of taking a portion of the growth for examination, he said that he deliberately decided against that procedure because he felt that he would have to cut deeply into the bladder wall to obtain a suitable piece, and that it was likely that he would go through the bladder and open up the spaces at the back of the bladder to infection. On the second occasion, that of the operation itself, he again did not use a cystoscope. It was a collapsed bladder, having had a tube in it for a fortnight, and in order to use the cystoscope it would have been necessary to distend the bladder with fluid to a considerable degree. The instrument which would have had to be used was the irrigating or flushing cysto-

scope; he had not such an instrument, and he saw no useful purpose likely to be served by such an examination.

Many points raised in cross-examination turned on the question of cystoscopy. The witness said he had already explained why he did not use a cystoscope. Mr. Justice Birkett said that he quite agreed, but he wanted Mr. Hunter to understand to what the questions were directed. This was an important part of the case, because he apprehended that plaintiff's counsel was going to say that one of the acts indicating lack of care was the non-use of the cystoscope. If Dr. Barringer could use it in September, and if surgical textbooks said that it was one of the chief means of examination, should he not have used it in March? Mr. Hunter explained that when Dr. Barringer used the cystoscope the conditions were entirely different. The bladder had been drained, and therefore presumably the condition of the mucous membrane was much healthier than when he himself had operated. The condition of the prostate itself was probably quieter, and the patient had got only a small sinus so that it was much easier to distend the bladder.

It was suggested by Mr. O'Sullivan that Mr. Hunter had "leaped" to the conclusion that the condition was cancer, and did not adopt any means of checking this grave conclusion. Mr. Hunter said that he could only assure the court that that was not true. Asked if, supposing he had taken a specimen, he would have expected to find the same result as Dr. Barringer, Mr. Hunter replied, "In view of what has happened now, I think there would be no doubt, but I should still at that time have been quite dissatisfied with the report that came back from the pathologist, because I should have thought that I had taken a bit from a non-cancerous area."

Mr. Justice Birkett: If you had been doubtful what this mass was, "It may be cancer," would you have taken a specimen then?

Mr. Hunter: I was not doubtful.

Mr. Justice Birkett: No. I quite understand what you are saying: "I was not doubtful. I was sure. With my experience and my examination I was sure, and I therefore decided not to take a specimen." I understand that perfectly. What I wanted to inquire was this: Assume for the purpose of the question that when you had made your examination and brought your experience to it, your mind was in a position of some hesitation: "This looks to me like cancer, but there are one or two elements which make me a little hesitant." Assume that state of mind. Would you have taken a sample then?

Mr. Hunter: I would have taken a sample.

With regard to the diverticulum, Mr. Hunter said that he agreed that it was there; all he could say was that his finger did not go into the opening because he thought the opening was closed by the swelling of the mucous membrane. The diverticulum was a secondary manifestation to the prostatic obstruction. He agreed that the procedures followed by Dr. Barringer were ordinary and useful procedures carried out by some surgeons.

The real trouble was something different from what you had diagnosed?—No, I diagnosed a condition which was present, and on top of that was this other thing.

And you concluded that it was cancer?—I did, yes.

Merely on what you saw and what you felt?—That is correct.

In re-examination the question was put to Mr. Hunter as to what steps he would have taken assuming that he had felt doubt about his diagnosis, and Mr. Hunter replied:

"I think you would have to be very definitely in doubt, but I think myself that there are only two things that happen about it when you make a diagnosis of this kind. You say, having taken all your experience into consideration, 'This is a carcinoma,' on that side, and then, on the other side, 'I do not think this is a carcinoma; I am going to take a section.'"

In reply to a further question, he said that in serious doubt he would have had a microscopical examination made.

Two urological surgeons gave evidence in support of Mr. Hunter; the nature of their evidence at certain points is indicated in the judgment.

Judgment

Mr. Justice Birkett delivered judgment on July 29. Dealing first with the case against Dr. Gleed, he said that Dr. Gleed when first consulted made a tentative diagnosis of enlarged prostate and advised a further opinion. Thereafter he acted in accordance with the view of Mr. Hunter whom he had called in. Mr. Hunter had said that it was an approved practice of the medical profession for the surgeon to accept full responsibility for the diagnosis, and he accepted such responsibility. Two other urological surgeons who had been called for the defence agreed that this was the recognized practice. One of the points made against Dr. Gleed was that in his examination before Mr. Hunter was called in he did not use a cystoscope, but he said that he did not possess a cystoscope and knew no general practitioner who did. It was also suggested that after Mr. Hunter had made his diagnosis of cancer Dr. Gleed should have made an independent diagnosis, and was negligent not to have done so. The judge was unable to accept that view; Dr. Gleed had acted in all that he did in accordance with the approved practice of the medical profession, and no negligence could be attributed to him. The case against Dr. Gleed failed.

Wholly different considerations arose in the case of Mr. Hunter. Everything here turned upon the mistaken diagnosis of cancer, for it was this alone which determined Mr. Hunter not to remove the prostate and indeed to do nothing more. It was charged against Mr. Hunter that he had not used a cystoscope, whereas this was the first thing that Dr. Barringer, the American surgeon, had done. Dr. Barringer had said that the steps which should have been taken to verify the diagnosis were a complete examination by means of the cystoscope—and there was no difficulty or danger in making such an examination—and through the open bladder, with a pathological examination of any questionable areas. This was clear and unambiguous evidence. Mr. O'Sullivan had quoted from Rose and Carless's *Manual of Surgery*, 17th edition, of which Mr. Hunter was joint editor, and there it was stated, "Of recent years the chief means of examining the interior of the bladder is the cystoscope"; and again, "The diagnosis of a vesical tumour can only be made by the cystoscope, and by discovering fragments of its substance in the urine . . . Early cystoscopy is all-important," and yet again, "Cystoscopy is now used so constantly that it is needless to lay stress on its value." Mr. Hunter had said that there were special reasons in this case why he considered it inadvisable to use a cystoscope, and one of the medical witnesses for the defence (Mr. Arnold Ward) had said that there was nothing inconsistent with proper care in not using a cystoscope, while the other (Mr. Julian Taylor) had said that on the occasion of Mr. Hunter's first examination, when there was urinary retention, it would have been dangerous to have used a cystoscope, and on the second occasion there was nothing to suggest its use.

The next question was that of the biopsy. Ought Mr. Hunter to have done what Mr. Barringer did in this matter? Here Mr. Justice Birkett read from a report in the *British Medical Journal* of July 10, 1948 (p. 85), of the meeting of the British Association of Urological Surgeons at which Mr. T. J. D. Lane, of Dublin, speaking of what he first called an "uncommon" bladder condition simulating carcinoma, was reported as follows:

"Biopsy was essential for proof of the presence of cystitis cystica and to differentiate it from cystitis granulosa and follicularis on the one hand and from malignant disease on the other. The resemblance to cancer in some cases had to be seen to be believed. . . . Although in his title Mr. Lane had used the word 'uncommon,' he said in conclusion that the condition was probably not very uncommon. There was little doubt that, if biopsy were resorted to oftener, glandular and other forms of metaplasia would be found much more frequently."

Mr. Hunter had said that he considered whether a portion should be taken for microscopical examination, but decided against it because he would have had to cut very deeply to get a suitable piece, and there was a possibility of going through the bladder and opening up spaces behind it to infection; also the wound would not heal and would leave an ulcer, while a scraping or superficial portion, avoiding deep cutting, would have been useless for his purpose. Mr. Justice Birkett dealt at length with the evidence of the medical witnesses on this

[1] "It is not every slip or mistake which imports negligence, and in applying the duty of care to the case of a surgeon, it is peculiarly necessary to have regard to the different kinds of circumstances that may present themselves for urgent attention."—*Mahon* v. *Osborne* (1939 2 K.B., p. 14).

point, and mentioned Dr. Barringer's statement that at the time in question there would have been no difficulty or danger in obtaining a section. The learned judge also quoted from Rose and Carless, under the heading "Tumours and Cysts," that "at present there is no certain means of diagnosis, except clinical, and the microscopical examination of a portion of the growth removed for the purpose."

The real question was whether Mr. Hunter exercised the reasonable care required of him. A mere mistaken diagnosis would not of itself be evidence of negligence. It might be akin to the "slip" mentioned by Lord Justice Scott in *Mahon v. Osborne*.[1] Certain things appeared to be quite clear: (1) the diagnosis was wrong; (2) the diagnosis was made on sight and touch alone, relying upon past experience; (3) the wall of the bladder gave the appearance of cancer for Mr. Hunter to make his diagnosis and for Dr. Barringer to have felt doubt about it. The recognized test in these circumstances, apart from the clinical, was by means of a biopsy, and the microscopical examination must be made when circumstances permitted.

"Now I am clearly of the opinion in this case that Mr. Hunter's duty to the plaintiff was to have made such a microscopical examination in the circumstances of this case if it was reasonably possible for it to be done, having regard to all the considerations he must keep in mind. Dr. Barringer said it could and ought to have been done. Mr. Hunter and his witnesses said, for the reasons they gave, that it could not and that it ought not to have been done."

He regretted to have to come to the conclusion that he could not accept Mr. Hunter's reasons as a justification for not taking a sample for microscopical examination. Dr. Barringer took the sample when he thought the area might be cancer, and if Mr. Hunter's reasons were to be accepted as against Dr. Barringer's evidence the dilemma would arise that in any case of this kind, where cancer had been diagnosed, a biopsy would never be possible. He found therefore that there was negligence in not taking the sample for examination, and that Mr. Hunter was lacking in the duty of reasonable care to the plaintiff in making the diagnosis he did in the way he did and doing nothing more to verify or check it, although the means of verification was available.

"If the sample had been taken, as I think it was possible to take it on the evidence, the microscopical examination would have shown that there was no cancer, and, although Mr. Hunter said it would have led him to the conclusion that he had not got a piece from the right place, so sure was he that his diagnosis was right, it may well be that he would have been shaken in his view and taken still further steps to verify his original diagnosis, which was, as I have said, of such infinite moment to the plaintiff."

On the matter of the cystoscope, he thought that on March 22, when Mr. Hunter made his first examination and when the retention of urine was so marked, Mr. Hunter was justified in not using the cystoscope, but before or on April 5, the date of the operation, a cystoscopic examination should have been made, for by then conditions had altered very greatly. He held the mistaken diagnosis to have been made because of the lack of reasonable care, particularly in the matter of the biopsy and the cystoscope.

His lordship then proceeded to assess the damages in view of the loss which the plaintiff had sustained and the expense to which he had been put. He came to the conclusion that in the aggregate these amounted to £6,300, and gave judgment for that amount against Mr. Hunter, with costs.

In circular No. 146/48 (dated Aug. 25, 1948) the Ministry of Health draws the attention of local authorities to the aftercare scheme which the National Association for Mental Health has been operating for the Board of Control and the Ministry. The scheme was designed to assist ex-Service men and women who had been discharged from hospital after treatment for psychotic and neurotic disorders. It is now apparent that these aftercare arrangements are ceasing to be particularly associated with ex-Service men and are becoming a part of the civilian service for mental welfare, which is now a function of local health authorities. In the future all such cases are to be referred by the regional hospital boards to the health authority concerned, and the latter can either provide any additional machinery itself or come to an arrangement with the National Association for Mental Health for the continuation of the work. The Ministry has asked local health authorities to let it know what action they propose to take by Oct. 1, so that the National Association can be informed in good time what call is likely to be made upon their services.

Medical News

Ninth International Congress on Industrial Medicine

The periods for formal registration by members have been arranged as follows: Sunday, Sept. 12, from 10 a.m. to 5 p.m. at Church House, Great Smith Street, Westminster. Monday, Tuesday, and Wednesday, Sept. 13, 14, and 15, from 9 a.m. to 10 a.m. and from 12.15 p.m. to 2.30 p.m. at Caxton Hall, Westminster. A number of social functions and demonstrations have been arranged for delegates during the week, and at the Royal College of Nursing a model of an Industrial Health Department has been erected and lecture demonstrations will be given in the Cowdray Hall of the Royal College of Nursing during the week. The Safety, Health, and Welfare Museum in Horseferry Road, Westminster, will be open during the week and a film unit will show films of industrial importance in the Museum Lecture Theatre. A Scientific Exhibition will also be open in the Bishop Partridge Hall, Church House, Great Smith Street, Westminster, when scientific apparatus and pathological specimens will be on view. A comprehensive programme of visits of technical interest has been arranged for the week following the Congress and full details of these are given in the Congress programme. The fee for the whole Congress is £3, but delegates wishing to attend only two sessions can do so on the payment of £1. The Secretary of the Congress is Dr. Harold J. Davies, Room 501, Garden Court Wing, B.M.A. House, but during the week of the Congress all communications should be addressed to him at Room 16, Caxton Hall, Caxton Street, Westminster, S.W.1. From Sept. 13–17, the following social functions have been arranged. Monday, Sept. 13, 6.30 p.m., cocktail party in the Georgian Restaurant of Messrs. Harrods, Ltd., Knightsbridge, London, S.W., arranged by the British Organizing Council and the Association of Industrial Medical Officers; Tuesday, Sept. 14, 6 p.m., Government Reception at Lancaster House, St. James's, London, S.W., when the Rt. Hon. George Isaacs, M.P., Minister of Labour and National Service, will receive the guests; Wednesday, Sept. 15, 10.45 p.m., special performance of the film "Hamlet," at the invitation of the J. Arthur Rank Organization, at the Odeon Theatre, Leicester Square, London, W.C. The preliminary programme of the congress was published in the *Journal* of Aug. 14 (p. 351).

Chinese University President

Professor Cheer Shec-nan, acting president of the National Central University, Nanking, and dean of the college of medicine, is visiting Britain under the auspices of the British Council until the end of October. He has been attending the Mental Health Congress in London and will afterwards make a study of recent advances in the field of internal medicine, particularly diseases of the cardiovascular system. He will also study hospital administration and teaching methods in medical and dental schools. Professor Cheer was one of the three medical delegates chosen to represent China at the World Health Organization Assembly in Geneva in June and July this year.

Wills

Mr. William Lloyd, formerly of London, W.1, left £32,773 13s. Dr. Geoffrey Garland, of West Strand, Rottingdean, Sussex, left £43,187 7s. 4d.

COMING EVENTS

British Commonwealth Medical Council

An informal dinner party, arranged by the British Medical Association, will be held at the Café Royal, 68, Regent Street, London, W., on Tuesday, Sept. 14, at 7 for 7.30 p.m., to meet the members of the British Commonwealth Medical Council on the occasion of its inaugural meeting.

Dinner for London Insurance Practitioners

The Local Medical and Panel Committee for the County of London has arranged a dinner for London insurance practitioners to commemorate the termination of its period of office. The dinner will be held at the Café Royal, Regent Street, London, W., on Thursday, Sept. 16, at 7 for 7.30 p.m. Tickets are 17s. 6d. each, exclusive of wines, and applications for tickets should be made to the Secretary, London Local Medical Committee, Tavistock House (North), Tavistock Square, W.C.

Society of Medical Officers of Health

The annual dinner of the Society of Medical Officers of Health will be held at Piccadilly Hotel, London, W., on Thursday, Sept. 16, at 6.45 for 7.30 p.m.

Bengué Memorial Award Lecture

Dr. Paul Banzet (Paris) will deliver the Bengué Memorial Award Lecture on "The Surgical Treatment of Gastric Ulcers" at the Royal Institute of Public Health and Hygiene (28, Portland Place, London, W.) on Wednesday, Sept. 22, at 3 p.m. Admission is free without ticket, but readers are asked to inform the secretary of the institute in advance if they intend to be present at the lecture.

Central Mediterranean Force Surgeons' and Anaesthetists' Dinner

The annual dinner of the surgeons and anaesthetists who served in the Central Mediterranean Force will be held at Claridge's Hotel, Brook Street, London, W., on Thursday, Sept. 23, at 7 for 7.45 p.m. Surgeons and anaesthetists may bring one guest and should apply for tickets to Professor H. W. Rodgers, O.B.E., F.R.C.S., 4, University Square, Belfast, Northern Ireland.

British Hospitals Contributory Schemes Association

The Final Conference of the B.H.C.S.A. will be held at Folkestone on Sept. 30 to Oct. 3, and the Annual General Meeting on Oct. 1. Information may be obtained from the secretary, Royal London House, Queen Charlotte Street, Bristol, 1.

SOCIETIES AND LECTURES

Tuesday

INSTITUTE OF LARYNGOLOGY AND OTOLOGY, 330, Gray's Inn Road, London, W.C. Sept. 14, 5.15 p.m. *"Dermatology as it Concerns the Ear, Nose, and Throat,"* by Dr. A. C. Roxburgh. Illustrated by lantern slides.

Thursday

DREADNOUGHT SEAMEN'S HOSPITAL, Greenwich, S.E.—Sept. 16, 3 p.m. Clinical demonstration by Dr. R. Hartley.

EDINBURGH POSTGRADUATE BOARD FOR MEDICINE.—At Anatomy Lecture Theatre, Edinburgh University, Sept. 16, 4.30 p.m. *"Modern Trends in Anatomy,"* by Professor J. C. Brash.

SOCIETY OF MEDICAL OFFICERS OF HEALTH.—At Piccadilly Hotel, London, W., Sept. 16, 6.45 for 7.30 p.m. Annual Dinner.

Friday

BRITISH TUBERCULOSIS ASSOCIATION.—At 26, Portland Place, London, W., Sept. 17, 3.15 p.m. *"Tuberculosis and Diabetes,"* by Drs. R. D. Lawrence and Ian Mills Hall. *"Collapse Therapy and the Bronchus,"* by Dr. L. E. Houghton.

MIDDLESEX COUNTY MEDICAL SOCIETY.—At Central Middlesex Hospital, Acton Lane, N.W., Sept. 17, 4 p.m. Annual general meeting. Address: *"Diagnosis,"* by Mr. Ivor Lewis.

BIRTHS, MARRIAGES, AND DEATHS

BIRTHS

Aldridge.—On Aug. 26, 1948, to Hilda, wife of Mr. L. W. Aldridge, F.R.C.S., a son.

Fox.—On Aug. 22, 1948, at Elizabeth Garrett Anderson Maternity Home, 40, Belsize Grove, London, to Margaret (née Graham), wife of Dr. John P. Fox, of 103, Howberry Road, Stanmore, a son.

Harries.—On Sept. 2, 1948, at Queen Charlotte's Hospital, to Betty, wife of Dr. W. A. Harries, a son.

Hartley.—On Aug. 26, 1948, at Oakvale Nursing Home, Sheffield, to Bee, wife of Dr. B. P. R. Hartley, M.B.E., a second son.

Jack.—On Aug. 27, 1948, at Elsie Inglis Maternity Hospital, Edinburgh, to Hilda, wife of J. B. Jack, F.R.F.P.S., F.R.C.S.Ed., a daughter.

Jones.—On Sept. 2, 1948, at Okehampton, Devon, to Marjorie (née Dobson), wife of Dr. C. Gwynda Jones, a son—John Richard.

Murphie.—On Aug. 28, 1948, at King's College Hospital, to Elizabeth, wife of Mr. C. I. Murphie, F.R.C.S., a daughter.

MARRIAGE

Stutt—Waite.—On July 17, 1948, at Holy Trinity Church, Claygate, John Charles, elder son of Rev. and Mrs. J. W. Stutt, 25, Strathmore Park North, Belfast, to Pamela, elder daughter of Mr. and Mrs. Bryan R. Waite, "Hillcrest," Beaconsfield Road, Claygate.

DEATHS

Drysdale.—On Aug. 30, 1948, at 11, Clarendon Terrace, Dundee, Campbell Westwood Drysdale, M.B., Ch.B., aged 46.

French.—At Nairobi, found dead, from gunshot wounds in the head, Stanley Gay French, F.R.C.S., aged 40.

Gill.—On Aug. 30, 1948, at North Staffordshire Royal Infirmary, Alexander Wilson Gill, M.D.Ed., F.R.C.P., of The Limes, Barlaston, Staffs, aged 60.

Kelly.—On Aug. 27, 1948, at North Wingfield, Derbyshire, John Booth Kelly, L.R.C.P.&S.I. and L.M.

Marriott.—On Aug. 30, 1948, Francis Keene Marriott, M.C., M.R.C.S., L.R.C.P., of Yoxford, Suffolk.

O'Driscoll.—On Aug. 29, 1948, at Bon Secow Home, Cork, Patrick O'Driscoll, M.B., B.Ch.

Ong Chong Keng.—On Aug. 31, 1948, murdered, Ong Chong Keng, M.B., B.S., Hong Kong.

Paterson.—On Aug. 28, 1948, at 340, Lee High Road, London, S.E., Arthur Robert Paterson, M.D., Major I.M.S., retired, aged 88.

Rashleigh.—On Aug. 29, 1948, at Coves Cottage, St. Peter's-in-Thanet, Hugh George Rashleigh, M.R.C.S., L.R.C.P., late of Chartham, near Canterbury, aged 72.

Schmidt.—On Aug. 21, 1948, Peter Wolstadt Schmidt, M.B., C.M.Ed., of 161, Hookstone Road, Harrogate, Yorks.

Stephen.—On Sept. 1, 1948, at 97, Fitzwarren Street, Salford, Lancs, Leslie Dechmont Stephen, M.B., Ch.B.Ed.

Wise.—On Aug. 30, 1948, at 115, Greenhill, Hampstead, N.W., Kenrick Stanton Wise, M.B., B.S., late Surgeon-General, Trinidad, B.W.I., aged 67.

EPIDEMIOLOGICAL NOTES

Typhoid at Greenock

A sharp outbreak of typhoid fever has occurred in the Greenock, Port Glasgow, and Gourock areas of Clydeside, and 30 cases had been notified by Tuesday, Sept. 7.

The first 3 cases were holiday-makers in Gourock who had crossed the Firth of Clyde to Kilcreggan, a favourite place for picnic parties, and there had taken water (unboiled) from a stream. The next batch of cases came from members of a church organization who, to the number of approximately 700, proceeded on an excursion to the same resort. Large numbers are known to have drunk unboiled water from the stream, and 24 cases have so far been reported in this group. The next 2 cases were Greenock youths who were camping at Kilcreggan. All these are primary cases, and it is expected that their number will increase in the next week or two.

So far the organism has not been discovered in the stream, but the bacteriological findings on samples taken at various points are awaited. No individual who drank water from the same source which had been boiled has been affected. It is known that drainage from a few dwellings reaches the stream above the point from which the water was taken. There is no history of typhoid fever in the locality. The one factor common to all cases, however, is the consumption of water from this particular stream, and the evidence is overwhelmingly in favour of this as the cause of the outbreak. The dates of the visits to the waterfall cover a long period, the first patient having been there on June 30. Most of the infections, however, date from July 31, when the party of about 700 spent the day near the stream and, owing to the hot weather, drank copiously at the waterfall. One recent patient lives in a hamlet a mile from the stream and definitely did not drink at the fall. Inquiries are continuing into this and other cases. Attention has also been given to other possibilities such as ice-cream bought in a nearby village, and farm milk—so far with negative results.

Most of the patients are children or adolescents. The incubation period has been long, the average being about 20 days. The illness has been clinically serious, but up to the time of going to press no death has been recorded.

Discussion of Table

In *England and Wales* a decrease occurred in the notifications of measles 1,286, whooping-cough 198, and scarlet fever 38; an increase was recorded for acute poliomyelitis 35 and diphtheria 10.

The largest decreases in the notifications of measles were Lancashire 236, Yorkshire West Riding 119, Surrey 103, and London 98. In contrast to the decreasing trend of whooping-cough in the whole country a rise of 87 was reported in London; the largest falls were Middlesex 48 and Yorkshire West Riding 48. Only small changes were recorded in the local returns of scarlet fever. The notifications of diphtheria, despite the slight rise, have continued for four weeks at the lowest level ever recorded. No changes of any size occurred in the local trends of diphtheria during the week.

A new outbreak of dysentery, affecting 12 persons, was notified from Cambridge M.B. during the week. The other large returns for dysentery were Lancashire 40 and London 10.

The incidence of acute poliomyelitis was almost doubled; the largest centres of infection were London 10 (Kensington 2, St. Pancras 2); Middlesex 10 (Wembley M.B. 4, Twickenham M.B. 2); Kent 9 (Chislehurst and Sidcup U.D. 2); Lancashire 8. Notifications have been widely scattered, with a tendency for most of the cases to occur in the densely populated areas. On the whole the situation this year appears to be one of high endemic incidence quite different in degree from that of last year but similar in distribution.

In *Scotland* only small changes were recorded in the notifications of infectious diseases. In Glasgow the notifications of dysentery increased from 25 to 44.

In *Eire* increases were recorded in the number of notifications of whooping-cough 59, scarlet fever 29, and diarrhoea and enteritis 17. An outbreak of whooping-cough, affecting 38 persons, was notified from Galway, Oughterard R.D. The rise in the incidence of scarlet fever was contributed by Dublin C.B. The rise in the notifications of diarrhoea and enteritis was due to isolated cases in several areas.

In *Northern Ireland* the notifications of measles decreased by 9, while an increase of 7 was recorded for scarlet fever.

Week Ending August 28

The notifications of infectious diseases in England and Wales during the week included: scarlet fever 812, whooping-cough 3,162, diphtheria 123, measles 3,774, acute pneumonia 240, cerebrospinal fever 29, acute poliomyelitis 70, dysentery 70, paratyphoid 17, and typhoid 12.

No. 34

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended Aug. 21.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included). (b) London (administrative county). (c) Scotland. (d) Eire. (e) Northern Ireland.

Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for: (a) The 126 great towns in England and Wales (including London). (b) London (administrative county). (c) The 16 principal towns in Scotland. (d) The 13 principal towns in Eire. (e) The 10 principal towns in Northern Ireland.

A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1948 (a)	(b)	(c)	(d)	(e)	1947 (Corresponding Week) (a)	(b)	(c)	(d)	(e)
Cerebrospinal fever	26	4	18	—	—	49	7	29	1	1
Deaths		—	—				2	1		
Diphtheria	116	14	23	14	5	147	11	41	13	12
Deaths	—	—	—		—	4	2	—	—	—
Dysentery	111	10	58	3	—	75	9	15	—	1
Deaths					—				—	—
Encephalitis lethargica, acute	3	—	—	—	—	1	—	—	—	—
Deaths		—					—			
Erysipelas			30	5	3			23	11	4
Deaths		—					—			
Infective enteritis or diarrhoea under 2 years				45					85	
Deaths	32	3	21		—	61	10	29	9	3
Measles*	4,611	189	43	39	25	3,278	143	30	224	3
Deaths†			—		—	5	—	—	—	—
Ophthalmia neonatorum	59	3	17	—	—	79	10	8	—	—
Deaths										
Paratyphoid fever	20	3	1 (B)	—	—	23	2	2 (B)	—	—
Deaths	—	—	—		—	—	—	—	—	—
Pneumonia, influenzal	266	9	—	3	1	233	13	3	2	3
Deaths (from influenza)‡	4	—	—		—	5	—	—	—	—
Pneumonia, primary			98	12				135	6	
Deaths	112	12			4		13		4	6
Polio-encephalitis, acute	6	—				50	6			
Deaths							—			
Poliomyelitis, acute	72	10	3	4	2	626	115	120	6	11
Deaths§	1	—					5			
Puerperal fever		—	8		—		3	11		—
Deaths										
Puerperal pyrexia‖	106	9	8	—	—	150	8	13	1	—
Deaths		—					—			
Relapsing fever	—	—			—	—	—			—
Deaths										
Scarlet fever	736	38	134	74	22	489	39	101	17	15
Deaths†			—		—	1	—	—	—	—
Smallpox	—	—	—		—	—	—	—	—	—
Deaths					—				—	—
Typhoid fever	8	—	1	2	2	12	3	4	5	5
Deaths	—	—	—		—	—	—	—	—	—
Typhus fever	—	—	—	—	—	—	—	—	—	—
Deaths					—				—	—
Whooping-cough*	3,260	315	24	114	17	1,818	180	77	83	12
Deaths	13	1	1		—	8	1	1	2	1
Deaths (0–1 year) Infant mortality rate (per 1,000 live births)	230	28	52		7	320	43	65	17	13
Deaths (excluding still-births)	3,771	583	547		92	3,843	541	539	141	102
Annual death rate (per 1,000 persons living)			11·0					11·2	8·9	
Live births	7,568	1281	917		241	8,378	1282	1025	407	249
Annual rate per 1,000 persons living			18·5					20·6	25·7	
Stillbirths	211	25	28			214	25	48		
Rate per 1,000 total births (including stillborn)			30					45		

* Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.

† Deaths from measles and scarlet fever for England and Wales, London (administrative county), will no longer be published.

‡ Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

§ The number of deaths from poliomyelitis and polio-encephalitis for England and Wales, London (administrative county), are combined.

‖ Includes puerperal fever for England and Wales and Eire.

The return of births and deaths in Eire for the weeks ended Aug. 7, 14, and 21 has not been received.

Any Questions?

Correspondents should give their names and addresses (not for publication) and include all relevant details in their questions, which should be typed. We publish here a selection of those questions and answers which seem to be of general interest.

Vitamins and Cataract

Q.—*Is there any evidence that some of the vitamins—e.g., vitamin C or A—may arrest the development of cataract? May it be caused by or related to a rheumatic condition?*

A.—Vitamins C, A, D, and riboflavin have all been incriminated in the development of cataract. Vitamin C is present in sufficient quantities in the normal lens, both in the oxidized and in the reduced states. There is a decrease of vitamin C in the aqueous when cataract is present, but it is not clear whether this decrease is a cause or result of the condition. Neither clinically nor experimentally has cataract been observed in vitamin C deficiency. Uncomplicated vitamin A deficiency does not appear to produce experimental cataract. When it has been observed in such experiments it would seem to have arisen from an associated vitamin D deficiency, and this in turn is linked with hypocalcaemia and its resultant clinical or subclinical tetany. Riboflavin deficiency produces cataract experimentally, but there is nothing to suggest that it occurs in clinical riboflavin deficiency. The evidence that other vitamins may be responsible for cataract seen clinically is even more flimsy, and there is no justification for the use of vitamins in an attempt to control its development. There is likewise no valid reason for believing that it is related to rheumatic conditions.

Treatment and Prognosis of Bronchiectasis

Q.—*What is the treatment of bronchiectasis and what is the prognosis? The patient is a boy aged 10 with a history of chronic bronchitis followed by whooping-cough and pneumonia in early childhood.*

A.—The prognosis of bronchiectasis depends upon the cause. We presume that in this case obstructive causes, such as a foreign body or tuberculous glands, have been excluded. In the post-infective type, which is usually associated with collapse, the prognosis depends upon the extent and age of the disease and the severity of the infection. In extensive bronchiectasis, with saccular dilatation and copious offensive sputum, the risk of complications such as pneumonia and cerebral abscess is very high. Perry and King (*Amer. Rev. Tuberc.*, 1940, **41**, 531), in a careful follow-up of 400 cases of bronchiectasis, found that the mortality in the saccular type was 37%, whereas in the cylindrical type it was only 13%. The prognosis of slight cylindrical dilatation of recent onset, limited extent, and without gross infection is very hopeful. This type often responds to medical treatment—thorough postural drainage and breathing exercises. The affected area must be located with bronchograms so that the drainage and exercises can be properly planned. This treatment may result in re-expansion of the lung, with restoration of the bronchi to normal. In the more severe type of infected bronchiectasis, surgical resection of the diseased area is the treatment of choice if the disease is localized. The operation of lobectomy carries a very low mortality in skilled hands, particularly when the patient is a child. If the patient mentioned has a localized area of saccular bronchiectasis with infected sputum, or if his condition does not respond to medical treatment, the opinion of a thoracic surgeon should be obtained.

Monteggia's Fracture-dislocation

Q.—*What exactly is Monteggia's fracture-dislocation of the elbow-joint? What is the treatment and what are the difficulties encountered in dealing with it?*

A.—Monteggia's fracture-dislocation is the name applied to the combined injury of fracture of the upper part of the shaft of the ulna and dislocation of the head of the radius. Typically there is anterior angulation at the site of the ulnar fracture and anterior displacement of the radial head. Exceptionally the reverse deformity is met with. The injury occurs in both children and adults. Treatment is difficult because the fragments

are unstable after manipulative reduction, yet operative methods, particularly for the radial dislocation, increase the risk of complications. Most surgeons advise operative reduction of the fracture of the ulna, with internal fixation by means of a plate, a bone graft, or an intramedullary nail. At the same time the head of the radius is replaced by manipulation. A full-length arm plaster is applied with the elbow flexed to the right-angle, and immobilization is continued until union of the fracture is present. The success of this line of treatment may be impaired by the occurrence of certain well-recognized complications. First, attempts to replace the head of the radius by manipulation may fail, or redisplacement may occur after initial reduction. Although this difficulty can be overcome by operative reduction with suture of the orbicular ligament or by excision of the head of the radius, these procedures considerably increase the risk of ossification of the surrounding haematoma and are reluctantly undertaken only in cases in which the injury is recent. Secondly, there may be delayed union or non-union of the ulnar fracture, demanding further operative treatment and further prolonged immobilization. Thirdly, in spite of the most careful treatment, ossification of the haematoma around the elbow-joint is a not infrequent occurrence and leads to serious limitations of elbow movements.

Hormone Treatment of Mastitis

Q.—*What are the relative merits of oestrogens, progesterone, and testosterone in the treatment of chronic mastitis? What is the recommended dosage of each?*

A.—The optimum and, in fact, the only logical treatment of chronic mastitis is testosterone if we subscribe to the generally accepted view that this condition is due to excessive stimulation of the breast tissue by an abnormally high level of oestrogens. If the dose of testosterone is large—e.g., 600 mg. by implantation or 25 mg. daily by injection—the function of the ovary is completely suppressed and the breasts tend to atrophy. Smaller doses, varying with individual cases, will produce a modifying but less absolute effect and without the disadvantage of producing hirsutism and virilism. These changes are produced by inhibition of the secretion of the pituitary gonadotrophic hormones. A more direct local action, antagonistic to oestrogens, appears to be produced by local inunction of testosterone in the form of an ointment, some 50 mg. a week or less being adequate. Oestrogens and progesterone are sometimes prescribed on the theory that before menstruation tension is felt in the breast region when the breast structure, ducts and acini respectively, are not completely developed. This may be the case in a small proportion of patients.

Incision of the Hymen

Q.—*What is the most suitable local analgesic for division of a tough hymen? How much should be used and at what point should it be injected? What is the best technique immediately and post-operatively?*

A.—A 1% solution of procaine could be used to infiltrate the posterior and lateral tissues of the introitus and lower vagina at the level of the attachment of the hymen, and incisions could then be made postero-laterally. If the indication is dyspareunia or apareunia, however, this operation is not recommended. Incision of the hymen alone gives unsatisfactory results, because in many cases the whole introitus rather than the hymen appears resistant and nearly always there is an important element of vaginismus, at any rate by the time the patient seeks advice. Moreover, the woman who suffers long-standing apareunia is usually so nervous and apprehensive that it is unwise to attempt any procedure under local analgesia.

Apareunia in recently married women without gross vaginismus is mainly due to ignorance; a little instruction and perhaps the daily use of graduated vaginal dilators by the patient herself for a few weeks is all that is required. When, however, the difficulty is long standing and vaginismus is present it is usually necessary to carry out a digital dilatation of the introitus and vagina (this involves stretching or tearing the hymen) under general anaesthesia. After this the patient is instructed in the use of vaginal dilators daily for three weeks. The object of these is not to dilate the vagina further but to allow the patient to convince herself that any previous obstruction to coitus has been removed and to restore her confidence. The tendency to muscle spasm persists for a time, but this can be overcome by leaving a large-size dilator in the vagina for 10 to 15 minutes. Relaxation of the pelvic floor muscles is also favoured by telling the woman to concentrate on forcibly abducting the thighs when she is lying in the dorsal position with the knees flexed.

Erythema Nodosum and Ringworm Infections

Q.—*Is erythema nodosum a recognized accompaniment of animal ringworm infections? A young farm labourer had animal ringworm, affecting principally the forehead, and painful shins. The lesions on his shins were undoubtedly those of erythema nodosum.*

A.—Erythema nodosum is one of the recognized patterns of allergic reaction to ringworm infections—an "ide" reaction, more common with the animal large-spore ringworms than with other types of infection.

Snoring

Q.—*A man aged 30 who is about to get married snores loudly. He sleeps with his mouth shut, he has no obvious clinical obstruction in the upper respiratory tract, and he seems healthy. Is there a remedy?*

A.—Snoring is in most cases due to the tongue falling back during sleep. In the absence of nasal obstruction or disease the usual cause is sleeping on the back. An old and simple means of avoiding this is to strap a small hard object on the middle of the back, so that the sleeper turns for comfort on to his side. The causes and treatment of snoring were discussed by the Section of Laryngology of the Royal Society of Medicine last year, and a report of this discussion appeared in the *Journal* (1947, **2**, 835).

NOTES AND COMMENTS

Embalming.—Dr. P. W. HAMPTON (Onchan, Isle of Man) writes: Your correspondent (July 31, p. 279) who wishes for a simple method of embalming might be interested in the way in which it is done in the transpacific emigrant trade. It is part of the contract that the body of a Chinese passenger dying *en voyage* shall be returned to the Celestial Empire for burial. A layer of ashes from the stoke-hole is spread at the bottom of the coffin and chloride of lime (chlorinated lime) is liberally sprinkled over this. The body is then laid on top and formalin (40% formaldehyde solution) is injected at various points: neck, right and left sides of chest, abdomen at three or four places, and both thighs. Formalin is then poured into the open mouth and sprinkled all over the body; then chloride of lime again, and finally the coffin is filled with ashes. A four-ounce syringe is used with a wide-bore needle, and a quart jugful of formalin is sufficient. Of course this method is impracticable if the relatives wish to view the body at the end of the voyage. I have embalmed seven Chinese on a voyage from British Columbia to Hong Kong and can vouch for the soundness of this method.

Corrections

Dr. ST. G. B. D. GRAY (London, E.17) writes: May I correct a numerical error in my letter on children's medicines (*Supplement*, Aug. 21, p. 91)? "Suspension sulphathiazolis" contains 2 grammes (= 4 tablets) per ounce (not 4 grammes as I stated).

In the article entitled "Modern Therapy of Benign Tertian Malaria" by Dr. J. F. Monk in the *Journal* of June 26 there is a misprint at the foot of p. 1224. The dose of quinine in the quinine–pamaquin regime should be 10 gr., not 10 g.

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